MODERNIZATION AND MAINTENANCE NUMBER

FEBRUARY, 1932

COTTON

Serving the

TEXTILE INDUSTRIES

LIBRARY OF CONGRESS
FEB 8

There's a Place for Fashion

In the realm of dress, it is fashion, not efficiency that is paramount. To allow the stylist to dictate to industry at the expense of efficiency and economy, however, is a different matter.*

The power in your plant should be transmitted by flat leather belts where the flat leather belt drive is best.

**Our folder discussing the advantages of group and short-center flat-belt drives may suggest worth-while economies to you. Write for it.*

Rhoads Tannate Watershed Belting combines in unusual degree grip, pliability, elasticity, strength and durability. It gives greater annual output for less annual outlay. Test it first on your hardest drives.

Consult a Rhoads' Transmission Engineer on your power transmission problems.

J. E. RHOADS & SONS

NEW YORK ATLANTA — PHILADELPHIA *Factory—Wilmington, Del.* — CHICAGO CLEVELAND

RHOADS TANNATE WATERSHED BELTING

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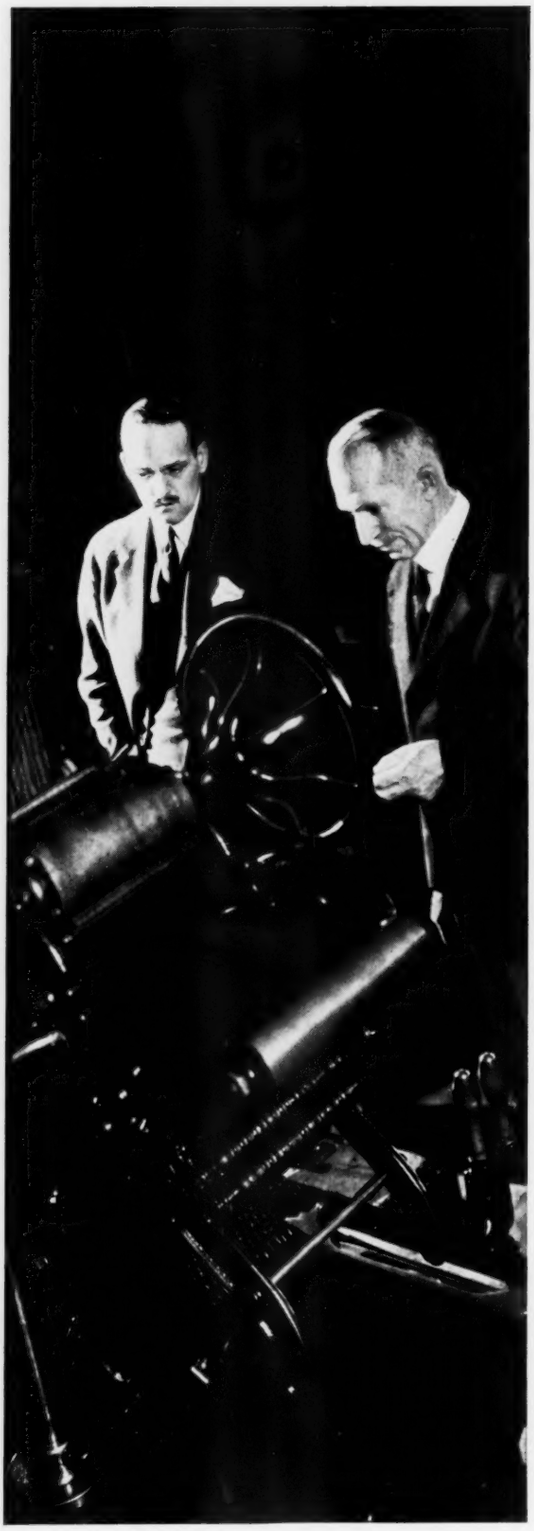
WHAT THE NEW C&K SUPER SILK LOOM means to the MANAGEMENT



The front office is interested in a loom which will have a lower initial cost, a lower cost of upkeep, weave more yards per hour, make more perfect goods, and can be readily changed over to meet style trends.

All of these points were taken into consideration in designing the Super Silk Loom. They are definitely true for this loom.

Initial Cost

The new loom is priced 10% to 14% below its forerunner.

Lower Cost of Upkeep

All parts have been strengthened. There are fewer of them. Cast iron has given way to steel at many points. All parts are machined to jigs so as to be quickly interchangeable. The results are: much less breakage, and much less time consumed in making repairs.

More Yards Per Hour

On tests in mills, the loom has woven at speeds as high as 190 picks per minute. It easily stands such speed. However, the delicacy of yarns recommends more conservative operation. The mill that has previously standardized on 144 picks per minute should have no difficulty in running 154 picks with the Super Silk Loom.

More Perfect Goods

Design refinement is to be found throughout. To mention only two points which will bring about higher qualities — the new loose reed motion reduces or eliminates many types of "starting" marks; the new takeup has wide-faced gears, intermediate pinion fixed on shaft turning in bearings at both ends, and guide and pressure rolls in enclosed bearings.

Wide Interchangeability

The new loom (machined throughout and standardized) can be quickly and inexpensively changed back and forth as to box capacity and harness motion, and as to automatic features. We have perfected the 2 x 1 box *shuttle* changing device and it now supplements our 2 x 1 *bobbin* changing design.

Certainly we have something to talk about and surely this is the time to do it.

THE NEW FAMILY

High Speed Worsted
4 x 1 Automatic; 4 x 4 Non-automatic

Cotton King — Cam or dobby
2 x 1 and 4 x 1 bobbin changing
2 x 1 shuttle changing

Super Silk
Cone, dobby or intermediate head
Non-automatic with feeler motion
2 x 1 or 4 x 1 bobbin changing
2 x 1 shuttle changing

PRECISION PRINCIPLES OF CONSTRUCTION ALIKE IN ALL

CROMPTON & KNOWLES LOOM WORKS

LOOMS FOR COTTONS, SILKS, RAYONS, WOOLENS, CARPETS AND RUGS, BLANKETS, JACQUARD FABRICS, ASBESTOS, LINENS

Allentown, Paterson, Philadelphia WORCESTER - PROVIDENCE S. B. Alexander, So. Mgr., Charlotte

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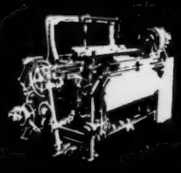
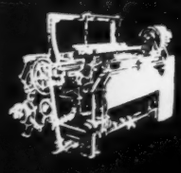
STOP LOOK LISTEN



X MODEL LIMITED



RUNS EXPRESS from DEPRESSION to PROSPERITY

SPEED — 190 PICKS and UP

PRINT CLOTH TRAIN CREW

One Weaver to 102 Looms

One Fixer to 102 Looms

A Bobbin Girl for 72 Looms

Write For Rates and Timetable

EQUIPMENT

Automatic devices for Safe, Smooth Running at Highest Loom Speeds ever attained in Automatic Weaving

No Stops for Meals — Safety devices allow it to run while the crew eats

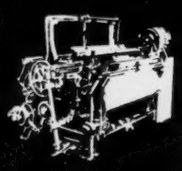
Lowest Fares because of Low Cost of Operation with Big Rebate to you in form of Mill Profits

Every Comfort and Luxury for those Mills that take a ride on this line

WHY NOT

LET YOUR MILL RIDE TO PROSPERITY

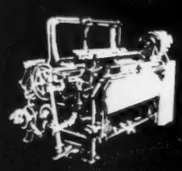
ON THE X MODEL LOOM



DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C



NORTHROP LOOM LINE

AldricH MachinE WorkS

SINGLE PROCESS SYNCHRONIZED PICKERS

(Using Your Present Machines)

MAKE

Evener Laps, yard by yard.
Cleaner Laps, with less foreign matter and fewer broken fibers.

SAVE

Labor, from 50% to 75%.
Power, from 10% to 50%.
Floor Space, Maintenance and Lubrication.

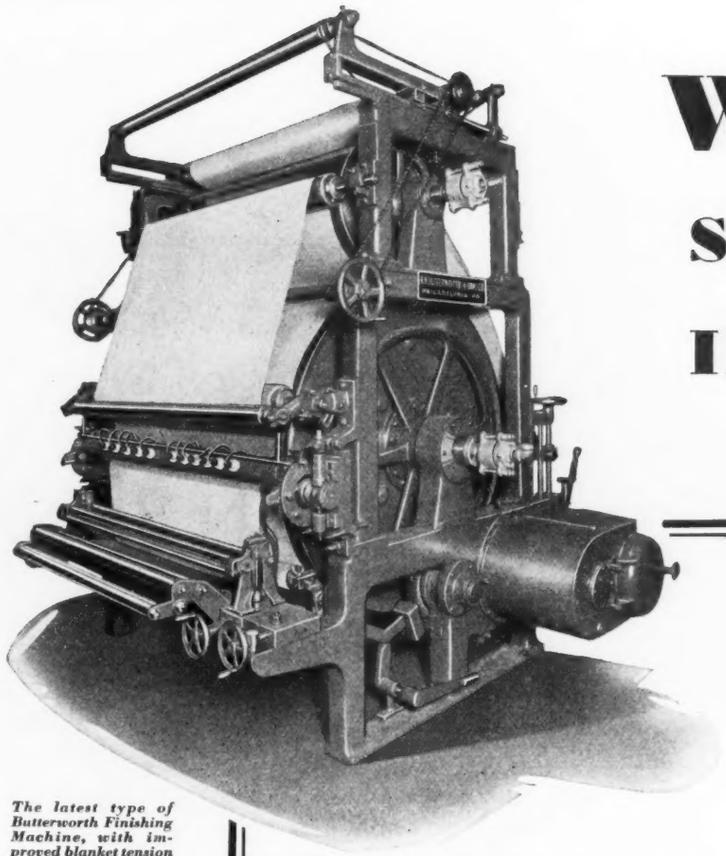
PAY

From 50% to 200% Yearly.

Made and installed by

AldricH MachinE WorkS

Greenwood, South Carolina



The latest type of Butterworth Finishing Machine, with improved blanket tension device which gives greater adjustment to blanket and insures the blanket giving a maximum of service. This machine plays an important part in good Sanforizing.

WHO WILL SANFORIZE IN 1932?

PLANTS that have already adopted sanforizing and installed sanforizing ranges are finding new markets for their goods and they are keeping busy because garments made of sanforized shrunk fabrics can never shrink out of fit.

The public is being educated to this rapidly and is already demanding sanforized fabrics.

An extensive advertising campaign by Cluett, Peabody & Co., Inc., developers of sanforizing, will further intensify this demand immediately.

We therefore suggest that every plant finishing wash garments and wash fabrics consider sanforizing *now*.

Our organization has been licensed by Cluett, Peabody & Co., Inc., to build sanforizing ranges. We have already installed five complete sanforizing units, and have orders for additional sanforizing machines, which we make *complete* —

There is no divided responsibility!

We shall be glad to put you in touch with concerns who are now operating these Butterworth Sanforizers that you may ascertain for yourself what a Butterworth Sanforizer will do for your plant and your business.

Complete literature will be sent promptly, and Butterworth Engineers will be glad to discuss with you Sanforizing in connection with your products.

H. W. BUTTERWORTH & SONS CO.

Established 1820

PHILADELPHIA, PA.

PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

Southern Office:
JOHNSTON BUILDING
Charlotte, N. C.

New England Office:
TURKS HEAD BUILDING
Providence, R. I.

In Canada:
W. J. WESTAWAY CO., Hamilton, Ontario

BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING MACHINERY FOR THE TEXTILE INDUSTRY

YOU CAN BANK ON TUFFER

Not on first costs, perhaps, but in its superior results you can bank on Tuffer Card Clothing. As a quality product Tuffer gives unusually long life and service—resulting in many more pounds of production and less waste in stock.

Tuffer Card Clothing takes grinding easily and perfectly, holds point longer, is easier to strip and affords closer setting without injury to the point. This means much more even carding.

You will find the Howard Organization ready at all times to help you get better results and economical operation. Let our representatives show you the true meaning of prompt, personal service . . . . and a fair deal on all card clothing problems.

Tuffer Card Clothing is guaranteed against shelling out.

HOWARD PRODUCTS

CARD CLOTHING
NAPPER CLOTHING
WIRE HEDDLES
CYLINDER FILLETS
DOFFER FILLETS
HAND STRIPPING CARDS
BURNISHER FILLETS
EMERY FILLETS
STRICKLES
TOP FLATS RECOVERED

HOWARD BROS. MFG. COMPANY

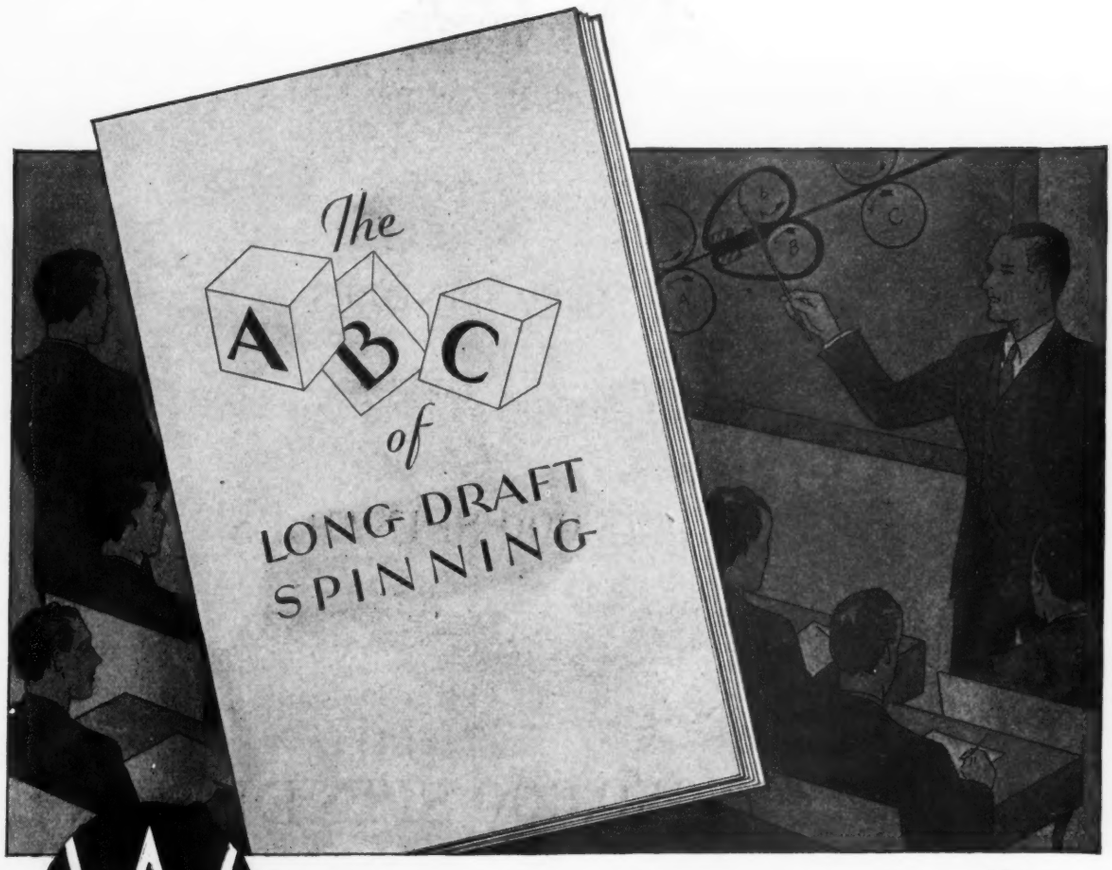
Home Office and Factory: WORCESTER, MASS.

Southern Plant
244 FORSYTH ST., ATLANTA, GA.

Branch Offices
PHILADELPHIA, DALLAS and WASHINGTON, D. C.

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

CARD CLOTHING



WANT A COPY ?

Here's the sort of book about long draft spinning that you will like. All the well-known systems diagrammed and compared . . advantages and disadvantages of each type set forth. Completely illustrated with photographs and drawings . . yet not long-winded or over-technical. Only a month or two old, yet already "The ABC of Long Draft Spinning" has been adopted as a text-book by instructors in textile schools.

• • • • •

Probably every cotton spinning mill in the country has either installed long draft spinning or has given thought to its future installation. Long draft is as great a step ahead of ordinary frame spinning as the latter was an advance over mule spinning.

"The ABC of Long Draft Spinning" affords a chance to honestly compare the various systems now on the market. If it's used as a text-book in our schools . . as it is . . its impartiality is obvious. If you have not seen a copy it will be worth your while to get one.

WHITIN
MACHINE WORKS

ESTABLISHED 1831

Fales & Jenks Division
Woonsocket Machine and Press Division

Whitinsville, Massachusetts, U. S. A.

Charlotte, N. C. Atlanta, Ga.

WHITIN MACHINE WORKS
Whitinsville, Mass.

Send me a copy of "The ABC of Long Draft Spinning."

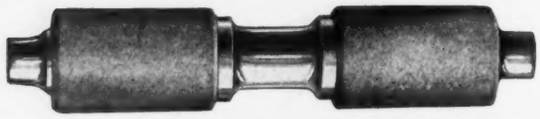
Name.....

Address.....

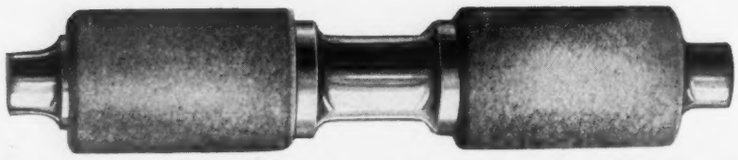
City..... State.....

1927—300,000 SPINDLES

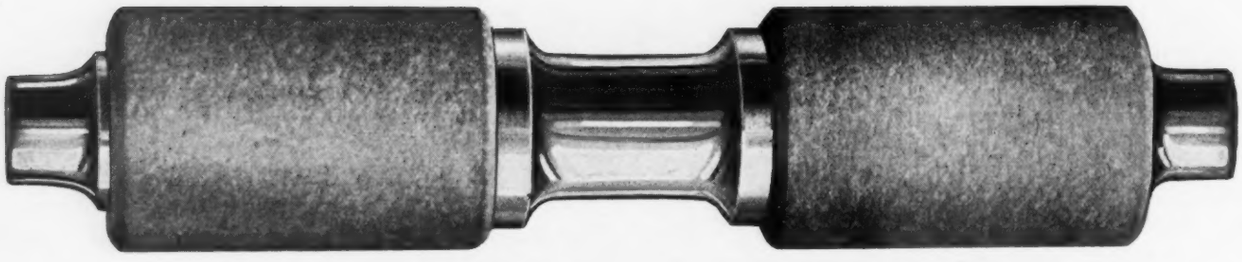
1928—775,000 SPINDLES



1929—1,425,000 SPINDLES



1930—2,050,000 SPINDLES



1931—5,000,000 SPINDLES

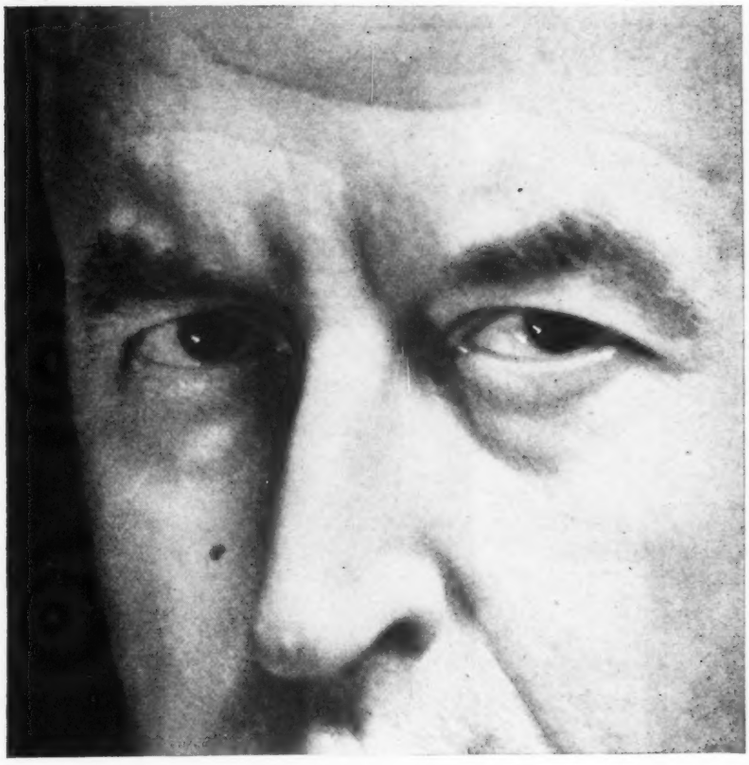
WHY this spectacular growth in the use of Armstrong's Seamless Cork Cots? The answer is easy. Large cash savings in roll covering costs, plus improved running conditions and high quality yarn have led to their general acceptance.

The 5,000,000 spindles now covered are in mills whose spindlage composes over 25% of the industry's total. As rapidly as is practical, these leading mills are changing over to cork. Today, Armstrong's Seamless Cork Cots are spinning quality yarns up to 120s and are saving mill owners upwards of $20.00 per million spindle hours of operation. Figure out what this saving would amount to in *your* mill!

For complete facts and figures about Armstrong's Seamless Cork Cots write Armstrong Cork Company, 923 Arch Street, Lancaster, Pennsylvania.

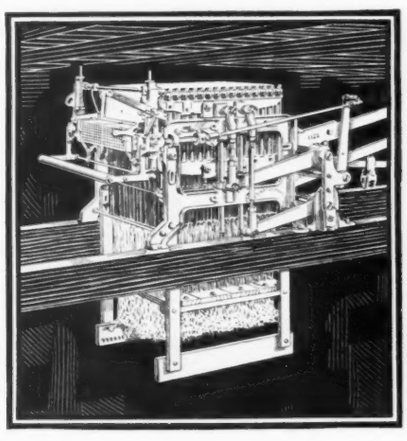
Armstrong's Seamless Cork Cots

For Spinning and Card Room Rolls



Let's Face This Issue SQUARELY

IT'S a time for decision! The editors of this magazine have been fighting for it for years. Important men, executives in leading corporations, have stressed its importance time and again. Now is the time for action. Now is the time to pursue that program of orderly replacement of worn-out equipment to the limit—and to substitute profit making equipment in its place. Take your jacquards, for instance. They may be partly to blame for the existing situation. It is almost certain that new Halton Jacquards will put an end to excessive jacquard operating costs—and give you the profit you deserve on every installation in your mill. The greater versatility of Halton's Jacquards, the simplified maintenance, the efficient degree of performance are the reasons why Orinoko, Gulbenkian Seamless Wilton and S. J. Aronsohn are using them. If you'll face the issue squarely, you'll act—first by sending for a catalogue. Will you?

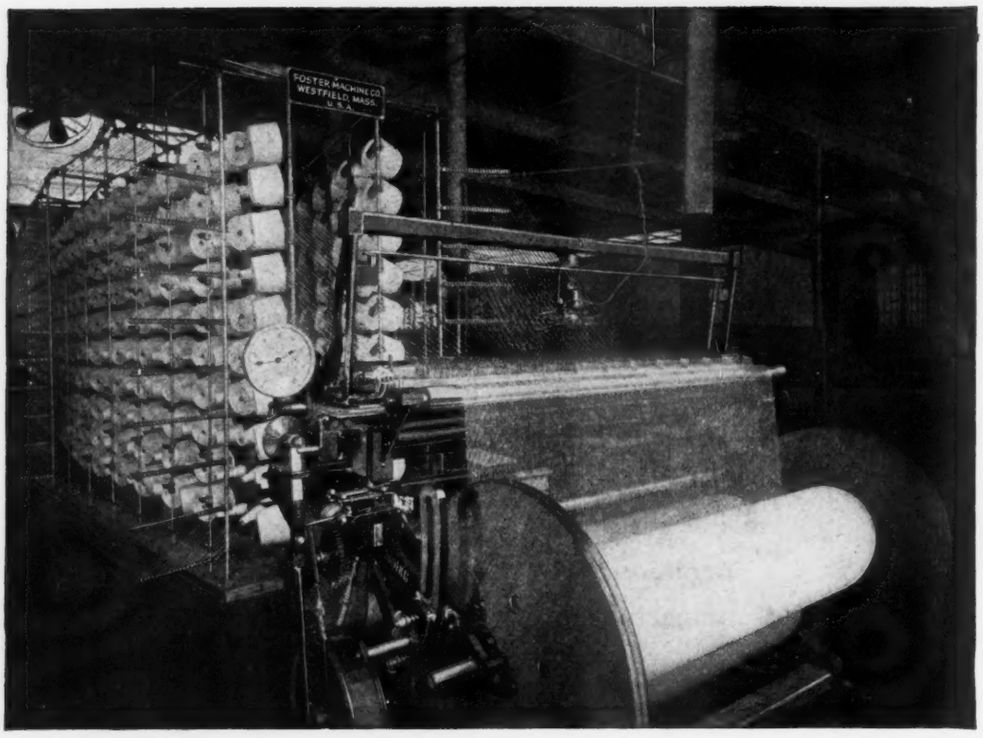


HALTON'S JACQUARDS

THOMAS HALTON'S SONS, "C" and Clearfield, Phila., Pa.

Selling Agents

H. A. FORBES, P. O. Box 1663, PATERSON, N. J. . Tel. Lambert 385-92W
DENNIS J. DUNN, 5th and College Streets . . . . . CHARLOTTE, N. C.
ARTHUR JEPSON, 5th and College Sts. or 407 Poplar Apts., CHARLOTTE, N. C.



Foster
CONE WARPING SYSTEM

The following points of superiority of the Foster Cone Warping System have been demonstrated under competitive conditions.

In the Cone Winding Process using the Foster Model 102 Winder—more pounds produced by the operative with the resulting lower winding costs per pound of yarn.

Economy in Floor Space—the highest possible winding speed considering delicate yarn conditions.

Sturdy machine design and construction—minimum cost for replacements.

Operating Conditions—end piecing movements reduced promoting efficiency and preventing operative fatigue.

In the Warping Process using the Foster Magazine Cone Creel—free drawing from the cone with exact even tensioning of each strand, eliminating tight and loose warp ends.

High Warping Speed without Stoppage for recreeling.

Each cone empties completely, eliminating stale yarn and waste.

Cones hold up to 4½ pounds of yarn (depending on the density of the material). This is an important item in lowering warping costs.

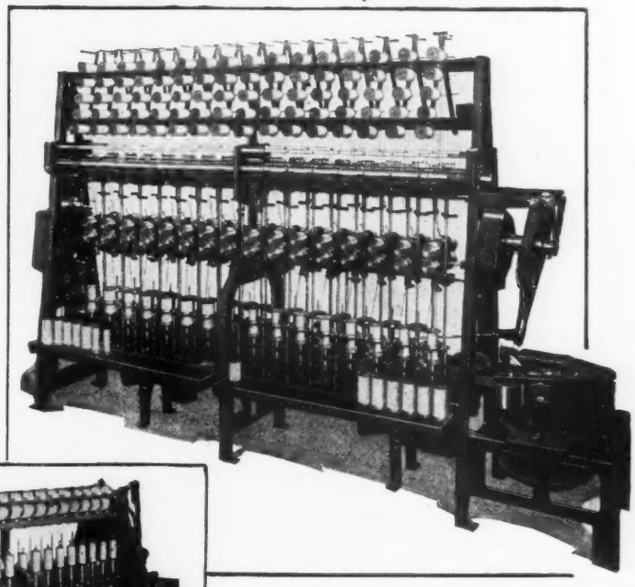
The Foster Cone Warping System is in operation in Cotton, Worsted, and Woolen Yarn and Weaving Mills.

FOSTER MACHINE COMPANY
WESTFIELD, MASS.

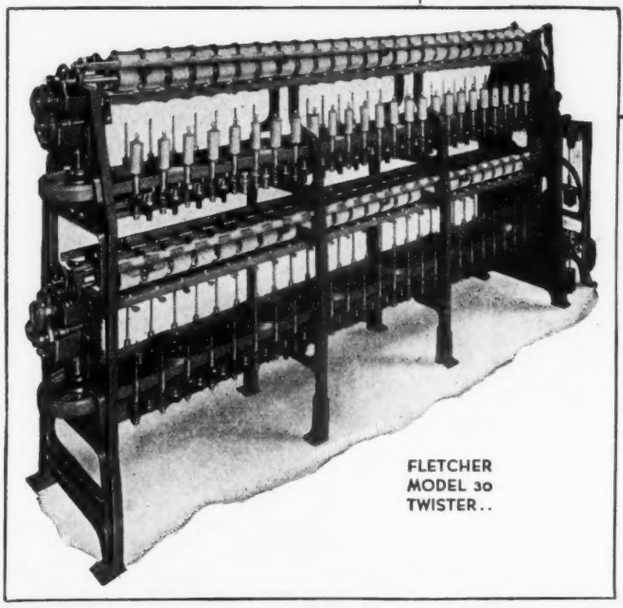
Fight Rising COSTS . . .

Throwsters are alive to the problem of increased overhead. This is evidenced by the growing demand for Fletcher Throwing Machinery. Write today for information on this dependable equipment that sets new standards of economical operation.

FLETCHER
"OILWELL SPINDLE"
ONE FILLING LASTS ONE YEAR



FLETCHER DUPLEX
DOUBLER-TWISTER
FOR SILK or RAYON



FLETCHER
MODEL 30
TWISTER..

FLETCHER THROWING MACHINERY

FOR SILK AND RAYON

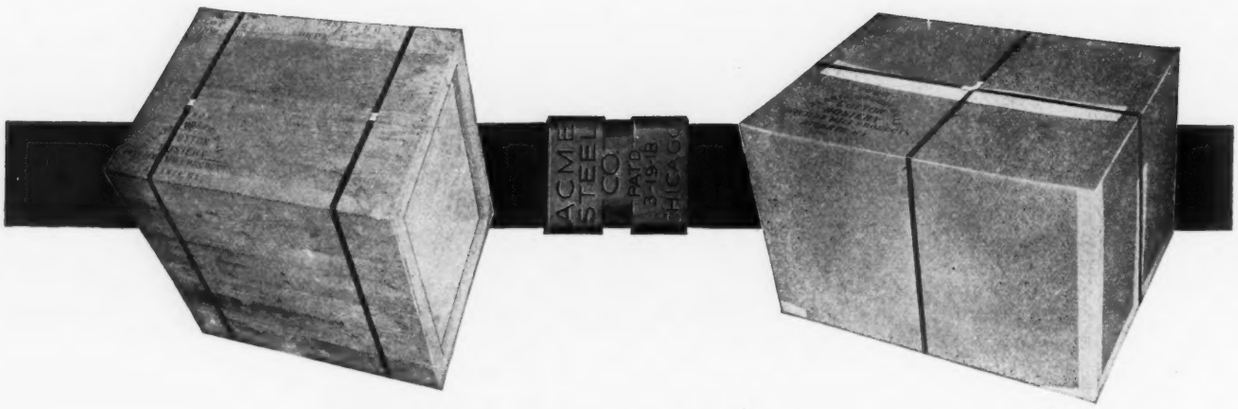
Duplex Doubler-Twisters...Single & Double Deck Twisters
Redraw Machines, Winders, Reels and Bundling Presses

FLETCHER

THROWING MACHINERY FOR SILK AND RAYON - - CENTRIFUGAL EXTRACTORS - - NARROW FABRIC LOOMS

FLETCHER WORKS · GLENWOOD AVENUE AND SECOND STREET · PHILADELPHIA

FORMERLY SCHAUM AND UHLINGER - ESTABLISHED 1850

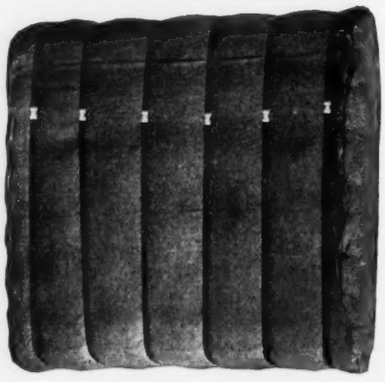


SAFE FROM DAMAGE AND PILFERAGE *"Bound to get there"*

Leading textile mills are saving money by reinforcing their shipping containers and bales the Acme way.

For Bales. Acme Bale Ties and Seals make a perfect baling job. Acme Ties are true temper, clean and smooth. The seal produced by Acme Seals and Sealing Tool is a positive non-slip joint. Only 1 inch of band overlap is required.

Used to strengthen wooden cases, Acme Nailless Band permits the use of lighter lumber—saving on container and freight costs. Two Acme bands increase the serviceability of a container 300%.

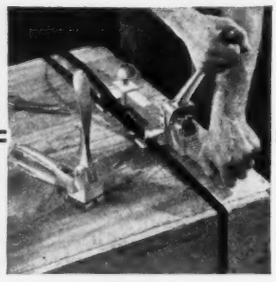


Bale of textile "Bound to Get There" with Acme Bale Ties and Seals.

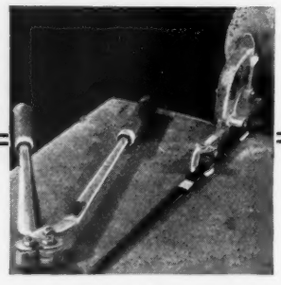
Fibre Boxes containing shipments of knit goods, etc., are insured proper security and safety against pilferage when strapped and sealed with Acme Nailless Band.

Large stocks of Acme Band, Seals, Tools, etc., are carried at Brooklyn, N. Y., Atlanta, Ga., Greenville, S. C., Spartanburg, S. C., and New Orleans,La. We serve as well as sell.

The Acme Sealing Tool for bales is light, fast and positive in operation.



Acme has the most complete line of equipment for strapping all kinds of shipping packages.



Illustrating a fast, light, one-hand Acme stretcher widely used on fibre boxes and for bundling.

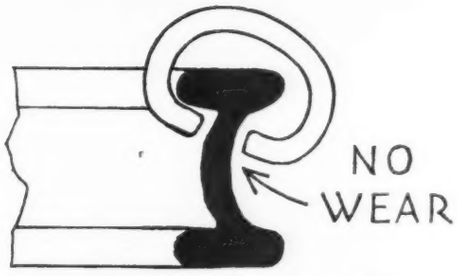
ACME STEEL COMPANY

48

Manufacturers Since 1880
Steel Protectors for Every Packing Purpose

SAVE WITH STEEL

General Offices: 2832-40 Archer Ave., Chicago
Branches and Sales Offices in Principal Cities



DIAMOND FINISH

CURVED WEBBING

reduces wear of heavy travelers

This patented ring is a sure money-saver, especially with heavy travelers. In the running position, large circle travelers lop over and cause outside wear on the usual straight web, as illustrated here at the right. But the patented Curved Web eliminates wear, as illustrated above. This means longer traveler life, smoother running. Curved Web is obtainable only in DIAMOND FINISH Rings. Specify them on your next order!

Ordinary Ring

Same price as regular ring

Whitinsville (Mass.) SPINNING RING CO.

Perlglo ENKA

meets this season's demands for DULL RAYON

Perlglo ENKA gives that rich soft glow demanded by the 1932 FASHIONS

1931 saw the beginning of definite trends in the varied use of dull rayon yarns. Advance style bulletins now show that richness of material is extremely important, that frocks and coats depend almost solely on line and material for effect. This means that Perlglo with its rich iridescence will be more than ever salable.

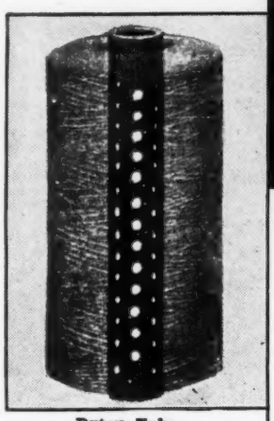
★ Perlglo is an improved dull yarn made under the exclusive Enka process. Used alone, or mixed with wool, cotton or silk, the effect is glowing yet totally different from the lustre of bright yarns. The soft pearl-like quality of Enka Perlglo is permanent; the yarn itself extra-resistant to shrinkage, stretching, perspiration and climatic changes.

★ Many style houses are specifying Perlglo for their dull fabrics for the Spring trade. There are now on the market many smart popular-priced fabrics enriched with Perlglo or Enka's famous bright lustre yarns, in piece goods and ready-to-wear. Full information on sources is yours for the asking.

AMERICAN ENKA CORPORATION
271 Church Street, New York City
Asheville, N. C. • Providence, R. I.

FOR ASSURANCE OF UNIFORMITY

Jumbo Cone



Dytex Tube

Winding Tube

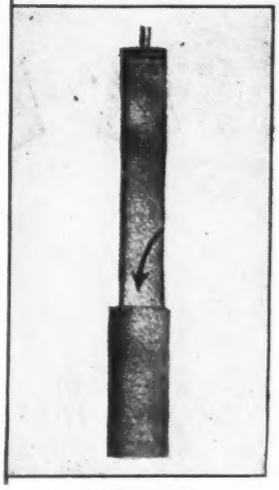
"SONOCO"
CONES - TUBES - ROLLS

The exclusive SONOCO developments—the Velvet Surface Cones — the Jumbo Cones — the Underclearer Rolls — the Dytex Tubes—together with the many other products—clearly demonstrate the results of SONOCO'S efforts to provide to the Textile industry paper carriers that open new avenues for greater operating performance and savings. SONOCO has achieved notable success in the design and production of products that are individual, distinctive and in constant demand from mills of every description.

With over thirty years of experience, unequalled manufacturing facilities and a reputation for prompt delivery service on orders, both large and small, it is but natural that leading textile mills depend upon SONOCO for every Cone, Tube and Roll requirement.

If you have a problem involving the use of paper carriers, request the assistance of SONOCO advisory service without obligation. Prices and samples will be gladly furnished upon request.

Velvet Surface Cone



Underclearer Roll

Mexican Representative:
Compania de Industria y Comercio, S. A.
Ave. Isabel La Catolica, 59
Mexico D. F., Mexico

Canadian Representative:
W. J. Westaway Co., Ltd.
Hamilton, Ont.

English Representative:
Textile Paper Tube Co., Ltd.
Romiley, Nr. Stockport, Eng.

SONOCO PRODUCTS COMPANY
HARTSVILLE, S. C.

MANUFACTURER

CONES, TUBES, CLOTH-WINDING CORES AND SPOOLS,
Velvet Surface Cones, Underclearer Rolls, Dytex Tubes, Etc.

Mills: Hartsville, S. C., Rockingham, N. C., and 709 W. Front St., Plainfield, N. J.
New England Office: 512 Book Store Bldg., New Bedford, Mass.

Spanish Representatives:
Sobre y Cia. S. L.
Fernandina No. 22
Barcelona, Spain

China Representatives:
Andersen, Meyer & Co., Ltd.
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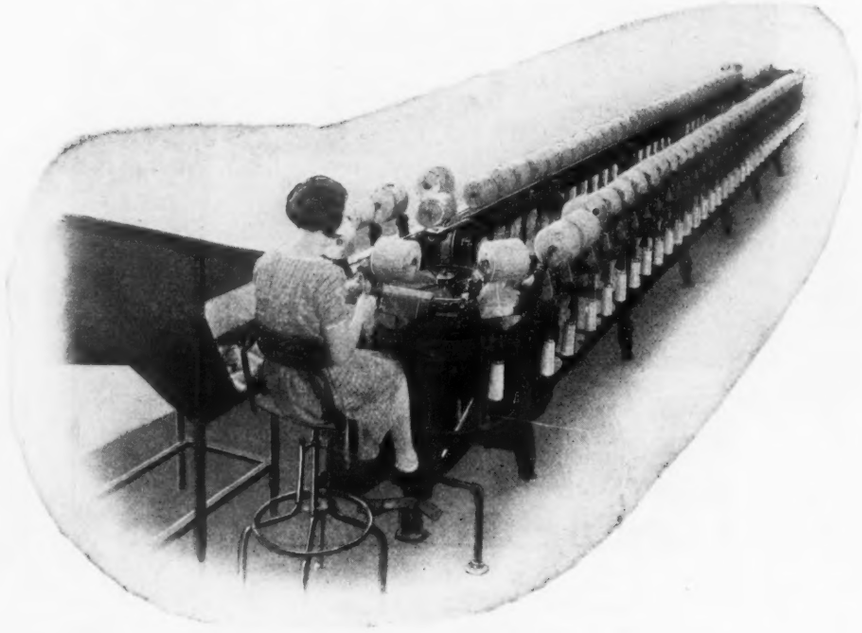
Shanghai, China

Australian Representatives:
Frank Lee & Co., Pty., Ltd.
Melbourne, and Sydney

Abbott Winders in 1932

Obsolete Equipment Lost Money in 1931

Let ABBOTT WINDERS make money for you in 1932



CONES OR TUBES

Of the finest winding
Of the largest size
At the lowest cost

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative: A. S. THOMAS, Greenville, S. C.

Come to YARN HEADQUARTERS for the correct synthetic yarn

Certain of your problems can best be solved by yarn. Some yarns can contribute to the kind of smooth running in the mill that prevents profit-stealing delays. Others have proved that they can most successfully control the lustre of finished products, a vital factor in 1932 fashions, especially in the underwear and hosiery fields. Since this company makes a yarn for almost every conceivable purpose, employing the viscose, acetate and nitrocellulose processes, we are especially well prepared to furnish you with the yarn that fits your requirements. Tubize yarns, Chardonize and Sançonize in particular, have achieved notable successes in the knitting field. We can recommend Chacelon and Sunbeam both for knitted and woven fabrics of diverse types. Experienced yarn men in our organization are ready to help you choose the correct yarn. They adhere rigidly to our policies of selling only yarns known to be suited to definite requirements and of giving diligent cooperation after the yarn is delivered. Bring your yarn problems to yarn headquarters. You will find what you want here.

It's in the yarn

TUBIZE·CHATILLON CORPORATION

2 PARK AVENUE, NEW YORK

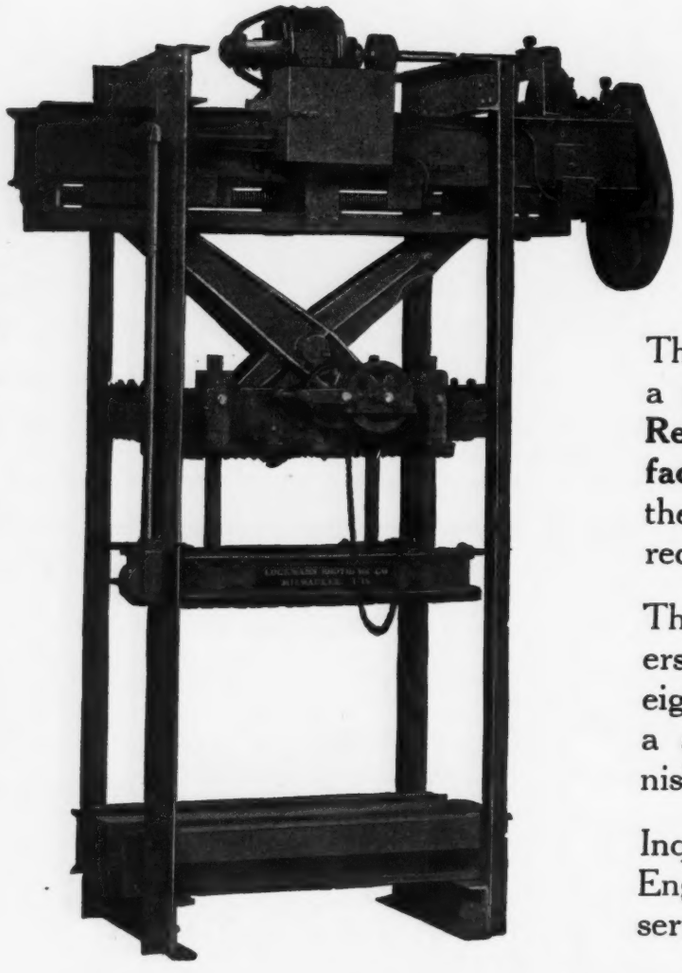
MAKERS OF VISCOSE, NITROCELLULOSE AND ACETATE YARNS

Tubize BRAND

LOGEMANN

Hand-Belt-Electric-Hydraulic

Baling —— Presses



USED FOR MANY YEARS IN HUNDREDS OF TEXTILE MILLS THROUGHOUT THE COUNTRY

These balers have established a reputation for **Economy, Reliability** and **General Satisfaction** that is best indicated by the numerous repeat-orders we receive continually.

The LOGEMANN line of balers consists of more than eighty types and capacities and a suitable press can be furnished for any purpose.

Inquiries are solicited and our Engineering Staff is at your service.

LOGEMANN BROTHERS CO.

3102 Burleigh St., Milwaukee, Wis.

CUTTING COSTS to create profits is the only logical solution to the slowness of present demand. Have you ever studied seriously the most important item in your program of cost reduction? Have you ever analyzed closely the one item in your present costs which is the most difficult to figure? You have? Good! And you're right. The cost of spoilage, breakdowns and repair bills with attendant delays are profit-wreckers of high degree. You can't figure them in advance and this one element of cost uncertainty is robbing you of profits which are rightfully yours. Alemite Corporation—absolutely without cost or obligation to you—will demonstrate to you on your own equipment and under your own tests how you can save 80% of repair bills, 100% of spoilage due to the wrong type of lubrication, 50% of lubricants and lubrication time and tremendous savings in operation. Write your name, address and request for this service on the diagonal lines at the corner of this page—tear it out—mail it to Alemite Corporation, 2682 N. Crawford Avenue, Chicago, Illinois. For a prompt analysis on cost saving in your own mills, mail it today!

Jacquard Weaving Room of a Southern Textile Mill

. . . . HOW A SOUTHERN TEXTILE MILL KEEPS THE SHADOW OFF THE COST SHEETS . . . .

POOR mill lighting casts a shadow of lower profit. It increases the chance of making mistakes and decreases the chance of catching them. It reduces output and raises costs of inspection and supervision.

We illustrate the Jacquard Weaving Room of a Southern textile mill where the penalties of shadow and glare are avoided by using 300 watt General Electric MAZDA lamps in Glassteel Diffusers. In both the front and back aisles one unit was placed above each pair of looms. This means they have *plenty* of light to see every detail of the product—and every part of the loom—and thus guard against "mis-weaves" and mis-matched colors.

If you want to cut down spoilage and waste—reduce production costs—keep the morale of your workers at high level—modernize your lighting. Our engineers will work with you, without charge, on plans for new and improved lighting in your mill or to improve the efficiency of your present system. Write to General Electric Company, Atlanta, Georgia, or Charlotte, N. C. General Electric Co., Nela Park, Cleveland, O.

TUNE IN *Hear the "G-E CIRCLE" . . . the woman's club-of-the-air . . . over National Broadcasting Company coast-to-coast network of 54 stations, at twelve, noon, E. S. T., every week-day but Saturday. . . . Also every Sunday, at 5:30 P. M., E. S. T., with the world's finest voices singing the world's favorite songs . . . .*

GENERAL ELECTRIC

MAZDA LAMPS

TESTS PROVE

EFFICIENCY AND PERFORMANCE

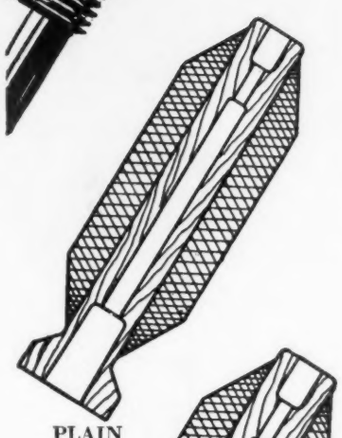
IN the final analysis it is time and actual working tests that prove or disprove the advantages claimed for any new piece of equipment. And so it has been with SKF Roller Bearing Spindles. Once a pioneering inovation they are an accepted fact today . . . *on the basis of performance alone.*

Two years ago, 25,000 SKF Roller Bearing Spindles were installed in the Spartan Mills, Spartanburg, S. C. They are operating at a speed of 10,500 R. P. M. Recently a series of comparative running tests were conducted over a period of five weeks, under actual mill conditions. by a spindle expert to definitely determine the efficiency of the SKF Roller Bearing Spindle as compared to the most modern standard plain bearing spindle. The results of these tests are shown in the table below.

With SKF Roller Bearing Spindles an evener and stronger yarn has been secured, power consumption reduced 22%, production increased 2%, spindle speed has remained more constant and maintenance reduced to one lubrication per year. The results of these tests are fully explained in our new booklet No. 214. Write today for your copy. It may give you an idea of what SKF Roller Bearing Spindles can do in your mill.

SKF INDUSTRIES, INC., 40 East 34th Street, New York, N. Y.

2808



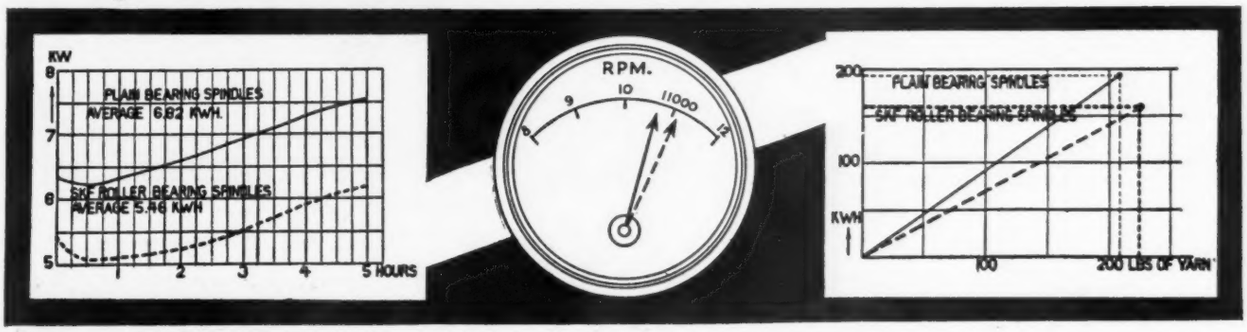
PLAIN

SKF

The Two Types of Spindles Compared in Test

SKF		PLAIN	
Spindle R.P.M.	10750	10800	Spindle R.P.M.
Front Roll R.P.M.	142	143	Front Roll R.P.M.
Cylinder R.P.M.	1560	1525	Cylinders R.P.M.
Cylinder Diameter	8″	8″	Cylinder Diameter
Whorl Diameter	1⅛″	1 1/16″	Whorl Diameter
Front Roll Diameter	1″	1″	Front Roll Diameter
Ring Diameter	1¾″	1¾″	Ring Diameter
Traveler Number	3/0	3/0	Traveler Number
Traverse	7″	7″	Traverse
Yarn Number	30s	30s	Yarn Number
Roving	3 Hank	3 Hank	Roving
Spindle Lubricant	Velocite E	Velocite E	Spindle Lubricant
No. of Spindles per Frame	276	276	No. of Spindles per Frame
Motor	10 H.P.	10 H.P.	Motor

SKF SPINDLES



So didst thou get thee a name, as it is this day.

Nehemiah IX, 10

NAMES are assets in proportion to their reputation for quality and measurable value.

Reputations are earned.

The methods and policies by which they are earned are of profound significance. They can be the means to progress and the bulwarks which assure survival in times of stress.

It is a source of gratification that those clients with whom we have been most intimately associated and whom we have been able to serve to the fullest extent are among the most firmly-entrenched names in the minds of the buying public today.

J. E. SIRRINE & CO.
Engineers
Greenville South Carolina

[An organization of national scope, prepared to serve you—regardless of location.]

The New G-E LOOM SWITCH

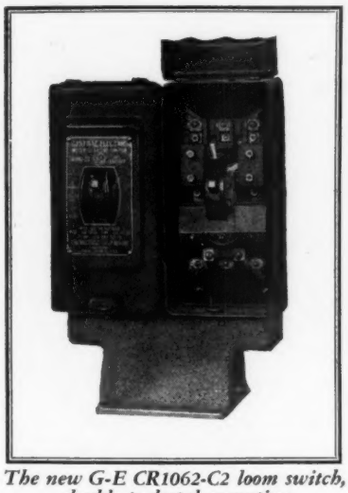
has every feature textile men asked for

A model of the new G-E CR1062-C2 loom motor-starting switch with hand reset thermal overload device, accompanied by a G-E engineer, went "on tour" for inspection and criticism in textile mills. Here it is — embodying every feature required by textile-mill operatives.

Moisture-resisting. Practically dust-tight without packing.

Switch snap-action trips free on overload. Molded handle, operative from front of case, plainly marked for ease in reading, fully protected against mechanical injury.

The new G-E CR1062-C2 loom switch—single-pedestal mounting — cover easily opened, or firmly locked — easy to wire — dependable



The new G-E CR1062-C2 loom switch, double-pedestal mounting

New and improved thermal overload devices in sizes to match motor ratings. Enclosed design allows for effective group fusing with maximum saving in installation costs.

Pedestals available to accommodate either one or two switches. Arranged so that conduit when locked in place forms ground connection.

Base supporting switch and overload devices can be easily mounted in the reverse position, making line connections direct to terminals at bottom.

Sufficient wiring space to bring in No. 8 line wires with soldered terminals.

Descriptive bulletin GEA1522 gives complete information; your nearest G-E office will send a copy on request.

301-88

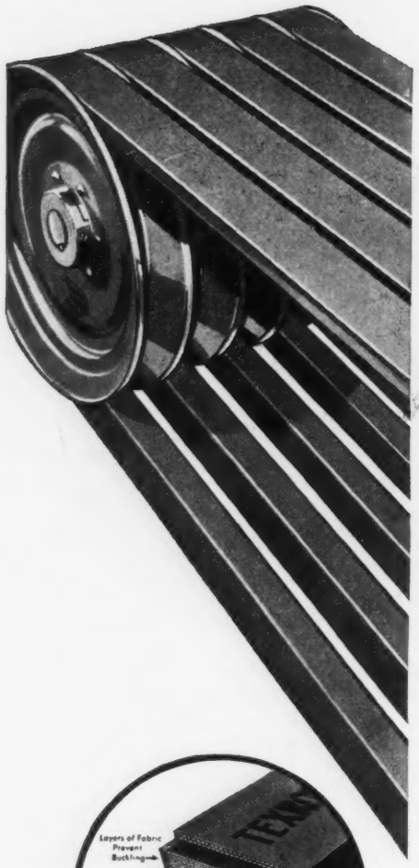
GENERAL ELECTRIC

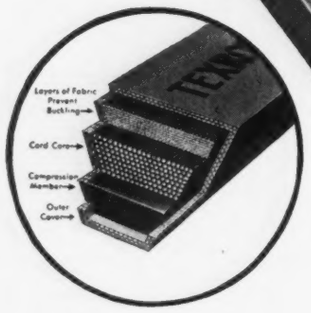
SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

PRESSED FROM STEEL

for Lower Cost and LIGHTER WEIGHT

Welded for Strength and Permanence!





— another B.F. Goodrich Product

Texrope Belts are made by B. F. Goodrich for Allis-Chalmers. How well these belts succeed in giving long service under constant flexing is indicated by this statement from a user:

"About four years ago you installed ten Texrope Drives on twisting frames for us. These frames have been running *night and day for four years* with absolutely no trouble."

This is equivalent to 12 years average service at 8 hours per day.

An attractive decrease in cost . . . and substantial reductions in weight . . . result from the use of pressed steel sheaves.

For this reason Allis-Chalmers has developed TEXSTEEL Sheaves for both driver and driven units . . . and offers a complete stock for immediate delivery in those sizes for which pressed steel is practical.

Welded at the rim and at the web, TEXSTEEL Sheaves eliminate any possibility of noise or vibration. Each sheave is a compact, permanent unit.

Throughout industry, over 100,000 Texrope Drives are saving money for their users. They are 98.9% efficient . . . always silent . . . slipless . . . and the Texrope Belts absorb shocks and vibration. Bulletin 1228-K shows Texrope Drive installations in a large number of industries. Send for a copy.

ALLIS-CHALMERS MANUFACTURING CO.
Texrope Division Milwaukee, Wis.
Specialists in Power Machinery Since 1846

Copyright 1931 by Allis-Chalmers Mfg. Co.

ORIGINATED BY ALLIS-CHALMERS

TEXROPE DRIVES

THE DRIVES THAT REVOLUTIONIZED TRANSMISSION PRACTICE • • •

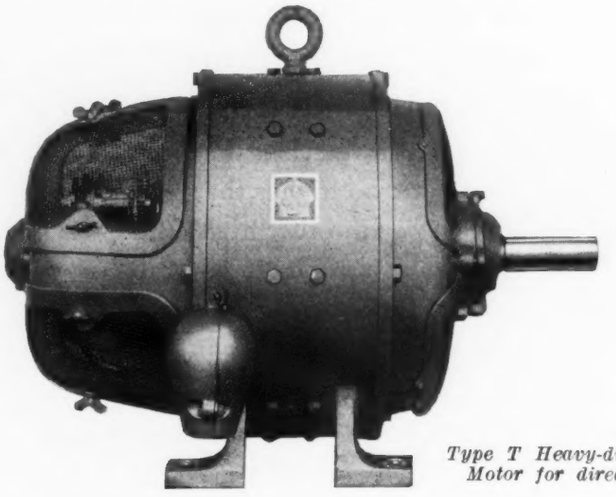
MAKE FINISHING A STRAIGHT-LINE PROCESS

with RELIANCE MOTOR-DRIVE

The illustration above shows a view from the discharge end of two 3-motor ranges. Each range consists of a water mangle with dry cans, starch mangle with dry cans, and tenter frame.

The 15-hp. Reliance motor is driving the 90-ft. tenter.

In addition to changing the speeds of all motors simultaneously from one rheostat it is possible to adjust the speed of each motor separately.



Type T Heavy-duty Reliance Motor for direct current.

MODERN finishing plants are demonstrating with Reliance Range Drives that costs can be pushed down by getting processes in line and keeping material on the move.

Cloth travels faster because it goes from the first to the last process in the range without in-between handling.

Power is applied to each section and closer to the point where power is needed. The direct drives with fewer parts, lessen both power and maintenance costs.

Processing is done at speeds that best suit the cloth and conditions. Results are more uniform.

The units of the range can be grouped into different combinations if changes in styles or other reasons make it desirable.

Reliance Drives can be furnished for alternating or direct-current circuits.

RELIANCE A-C D-C MOTORS

Reliance Electric & Engineering Co.
1070 Ivanhoe Road, Cleveland, Ohio

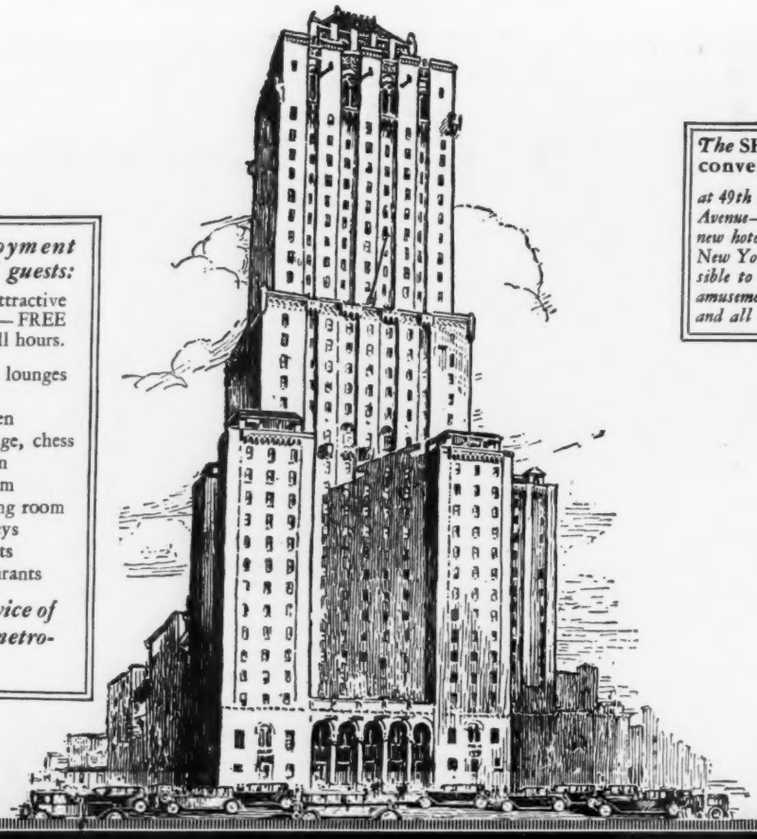
Branches: Birmingham, Boston, Buffalo, Chicago, Cincinnati, Detroit, Milwaukee, New York, Philadelphia, Pittsburgh, Toledo.

For the enjoyment of **SHELTON** *guests:*

A large and attractive swimming pool — FREE to all guests at all hours.

Four comfortable lounges
Solarium
Roof Garden
Game rooms—bridge, chess
Gymnasium
Billiard room
Library and reading room
Bowling alleys
Squash courts
Excellent restaurants

and every service of a first class metropolitan hotel.



***The* SHELTON is most conveniently located**

at 49th Street and Lexington Avenue—in the center of the new hotel district of mid-town New York, and easily accessible to all smart shops, the amusement life of the city and all transportation.

The SHELTON

New York's most unusual hotel

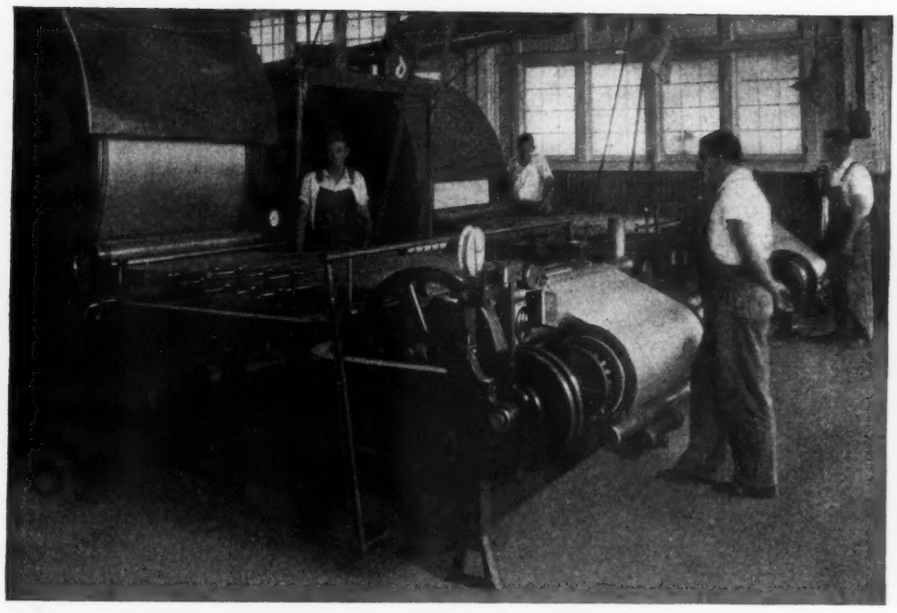
An outstanding favorite among visitors to the city. Combines the attractions of a private club and metropolitan hotel

A UNIQUE, club-like atmosphere most unusual to find in a metropolitan hotel. Where visitors to the city may enjoy themselves as much as though they were guests of a large private club. Yet in spite of its many extra attractions the room charges are no higher than you have to pay in other high class hotels where the most you can expect is the ordinary "room and bath." You'll like *The* SHELTON.

$2.50 to $3.50 a day for one person; $4.00 and $4.50 a day for two; larger accommodations always available. Special rates for those staying a month or more.

The SHELTON - - - New York
at 49th Street and Lexington Avenue

Ready for a plunge in *The* SHELTON'S famous swimming pool



EVERYBODY PREFERS

Raygomm

Everybody is satisfied with the practical advantages proved by Raygomm. Operatives, finishers, superintendents and mill executives in every textile center have discovered the merits of Raygomm from first-hand experience. They know that Raygomm promotes economy both in its low initial cost and elimination of waste. Freedom from involved formulas, simplicity and ease of handling, the soft hand and even dyeing which appear in all Raygomm-sized rayon, have combined to develop universal confidence in this product of Stein Hall Research Laboratories.

STEIN, HALL & COMPANY, INC.

EST. 1866

285 MADISON AVENUE NEW YORK CITY

BOSTON PROVIDENCE CHICAGO PHILADELPHIA CHARLOTTE SAN FRANCISCO

Left: *Seamless Monel Metal dipper—capacity 2 quarts.*

Right: *Seamless Monel Metal light duty pail. Made in 12, 14 and 16 quart capacity.*

Left: *Seamless Monel Metal heavy duty factory pail with bottom hoop. Made in 12, 14 and 16 quart capacity.*

Right: *Seamless Monel Metal acid pail. Capacity 12 quarts. Also furnished with bottom hoop.*

Seamless Monel Metal pan. Made in 10, 14 and 17 quart capacity.

Durable and Corrosion-resisting . . . these Utensils won't affect dyestuffs

Nesco Monel Metal utensils are extensively used for the handling of dye liquors, sizes, acids, alkalies, oils and similar materials used in textile dyeing, bleaching and finishing plants. These utensils are also ideally suited for small lot dyeing . . . hosiery, for instance . . . and for other operations where colors must be protected from contamination . . . Durable seamless Monel Metal utensils last for years under the hard use encountered in textile plants. They won't rust. They have no coating to wear off. They are highly resistant to corrosion, easily cleaned and retain their silvery appearance for years and years . . . Note carefully the different Nesco Monel Metal utensils illustrated above. Consider how many of these are needed to make your dyeing equipment complete and modern. Order through your regular supply house or write direct for catalog and price list.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

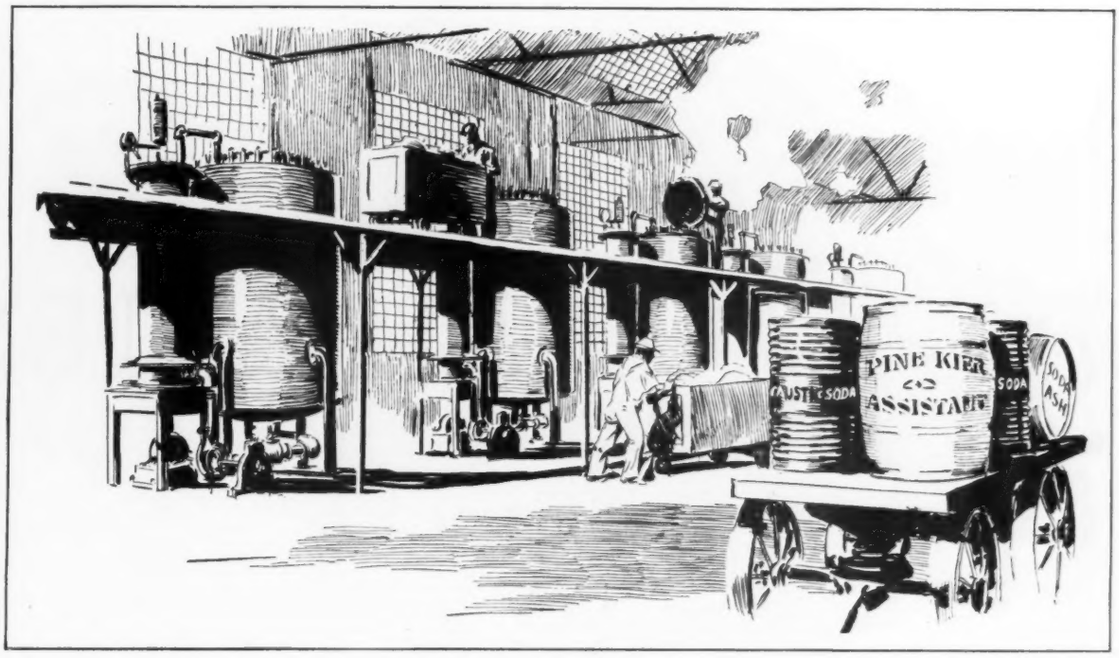
A HIGH NICKEL ALLOY

MONEL METAL

NICKEL ALLOYS PERFORM BETTER LONGER

Monel Metal is a registered trade mark applied to a technically controlled nickel-copper alloy of high nickel content. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

INCO MONEL METAL



YARMOR MAKES THE BEST KIER ASSISTANT

When it is made soluble by textile chemical manufacturers, Yarmor Steam-distilled Pine Oil will help you to obtain the most satisfactory results in the kier boiling of cotton.

Spotty kier work is eliminated because, in wetting out, the cotton is penetrated thoroughly and rapidly so that the liquor comes in contact with the entire surface of the cloth.

After the liquor loosens the fatty and waxy products, the Yarmor kier assistant holds them in suspension, making possible an efficient rinse, which is necessary to obtain the brightest white goods of soft texture.

By the use of Yarmor kier assistant the time of kier boiling is reduced from 30 to 35 per cent.

Consult your textile chemical manufacturer or distributor or

NAVAL STORES DEPARTMENT

HERCULES POWDER COMPANY
INCORPORATED

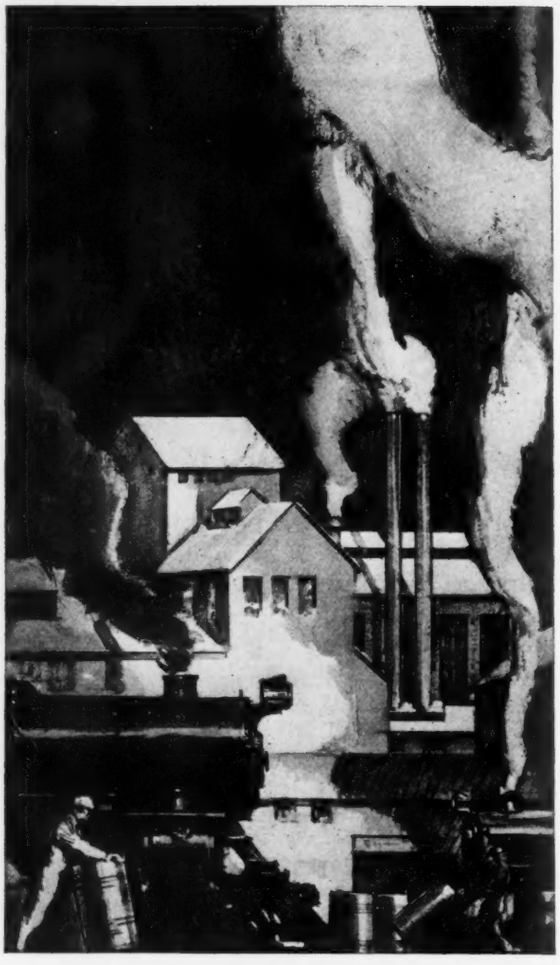
995 Market Street . Wilmington, Delaware

Branch Offices.....Chicago.....New York.....St. Louis.....Salt Lake City.....San. Francisco

STEAM-DISTILLED PINE OIL . STEAM-DISTILLED WOOD TURPENTINE . WOOD ROSIN . ALPHA TERPINEOL
COMMERCIAL ABIETIC ACID . ETHYL ABIETATE . NITROCELLULOSE . CHEMICAL COTTON

00-12

DIAMOND ALKALIES



DIAMOND Alkalies are to industry what salt is to mankind . . . a vitally essential element. Many industrial plants must have a never failing supply and the quality *must* be unvarying.

Diamond appreciates this responsibility and has met the challenge . . . our chemical processes have been refined by years of constant improvement . . . no effort has been spared to attain and maintain the highest standard of quality and purity . . . why you can specify Diamond with the utmost confidence.

Diamond Alkali Company

Pittsburgh, Pa., *and Everywhere*

SPRING SHADES
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1932
SPRING SEASON
COLOR CARD
Color formulae for any of these seventy-eight shades on Wool, Cotton, Silk, Weighted Silk, and Rayon, may be obtained through our nearest Branch Office.
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Incorporated
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PROVIDENCE—15 Westminster St.
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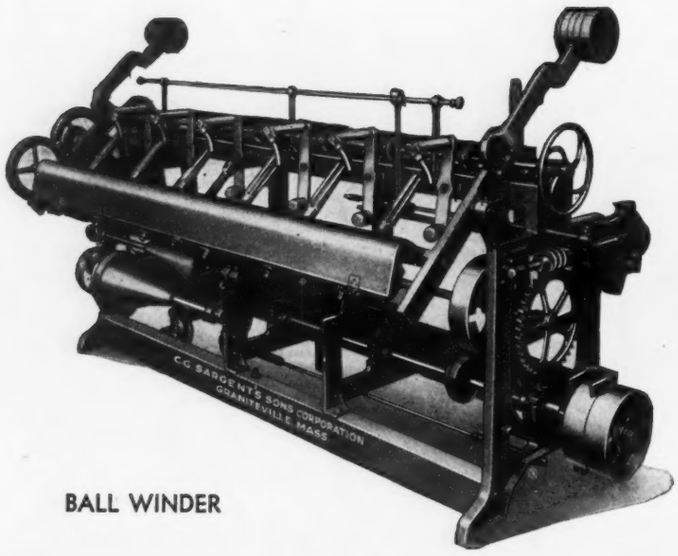
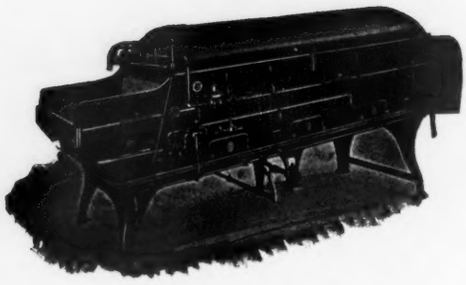
PHILADELPHIA—200-204 S. Front St.
CHARLOTTE—201-203 W. First St.
SAN FRANCISCO—145 Second St.
TORONTO—137-145 Wellington St., West
NATIONAL DYES



BALL WINDER



YARN
CONDITIONING MACHINE

SARGENT MACHINERY WILL MODERNIZE YOUR EQUIPMENT AND CUT MAINTENANCE COSTS...

The Sargent Line of Machinery Applicable to Cotton Mills Includes:—

Automatic Feeders
Bagging Machines
Ball Winding Machines
Cotton Stock Drying Machines
Continuous Automatic Extractors
Cotton Rinsers
Dusting Machines
Opening Pickers
Wet Pickers
Yarn Conditioning Machines

C. G. SARGENT'S SONS CORP.

Fred H. White, Sou. Agent
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R. C. Jefferson Co., Phila. Agt.
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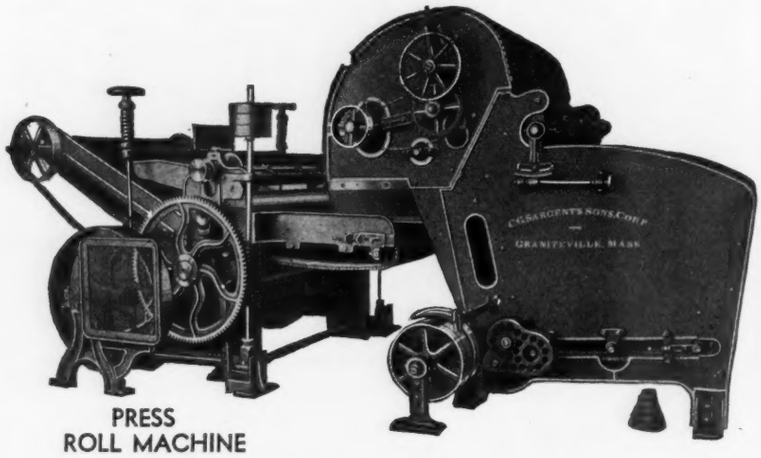

PRESS
ROLL MACHINE

SARGENT

TEXTILE MACHINERY

WITH

SIZING PROBLEMS

COME TO

SIZING SPECIALISTS

Arnold, Hoffman chemists and engineers have behind them over 115 years of experience devoted exclusively to solving sizing, softening, finishing and weighting problems. At their command they have the most complete facilities to work out solutions to your specific problems. The Arnold, Hoffman line includes Gums, Sizing Compounds, Oils, Soaps, Dextrines and Chemicals of the highest quality. They are promoting faster production, real savings and more salable textiles for hundreds of mills. Write for details.

ARNOLD, HOFFMAN & CO., INC.

PROVIDENCE · NEW YORK
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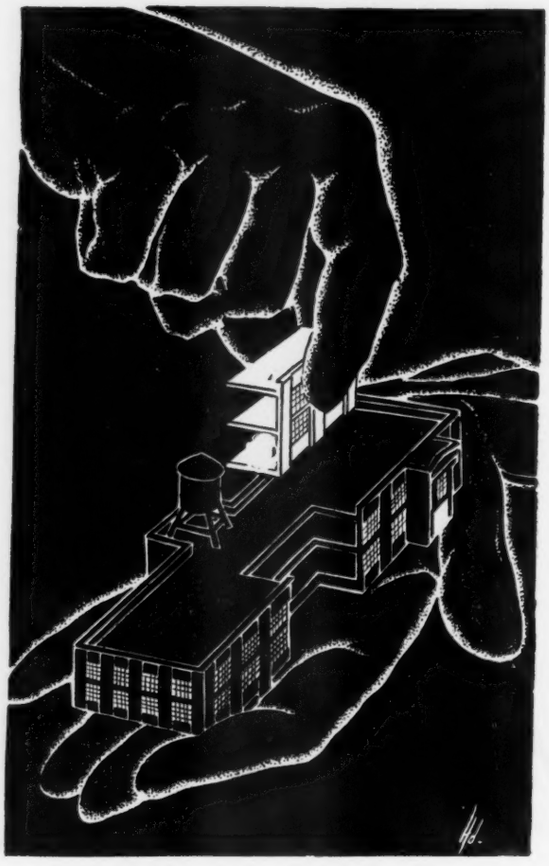
PRODUCTS—Warp Dressing, Finishing Materials, Soluble Gums, Sizing Materials, Soaps, Soluble Oils, Sulphonated Oils, Alizarine Assistant, Pigments, etc.

SOLE AGENTS FOR Belle Alkali Company of Belle, W. Virginia. Liquid Chlorine, Bleaching Powder, Caustic Soda (Solid and Flaked).

Departmental MODERNIZATION *is the key to future* SALES

RELOCATION of machinery, improved movement of product through plant and installation of production efficiencies that speed smooth production and cut operating costs are today's safeguards for the future.

Competition so demands modernization that mills that have not already done so are reorganizing their major operating departments. It is a matter of first importance to the small mills—for the larger mills know modernization's vital importance.



Perhaps but a single department is slowing up production. Industrial engineers can give needed advice regarding any textile problem for they see each separate department in its relation to the whole plant . . and they have nothing to sell to a mill except their broadly experienced service.

Whether you are considering the addition of a dye plant, carrying finishing a step furthur, or a change of product, retain the comprehensive service of engineers whose chief activities are in the textile field.

Correspondence is invited with the understanding that preliminary consultation is entirely without obligation.

ROBERT AND COMPANY
ATLANTA INCORPORATED GEORGIA
Architects and Engineers

Among Cotton's Readers

DONALD COMER,

President,
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Donald Comer

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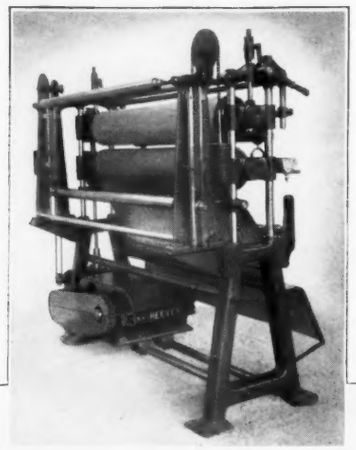
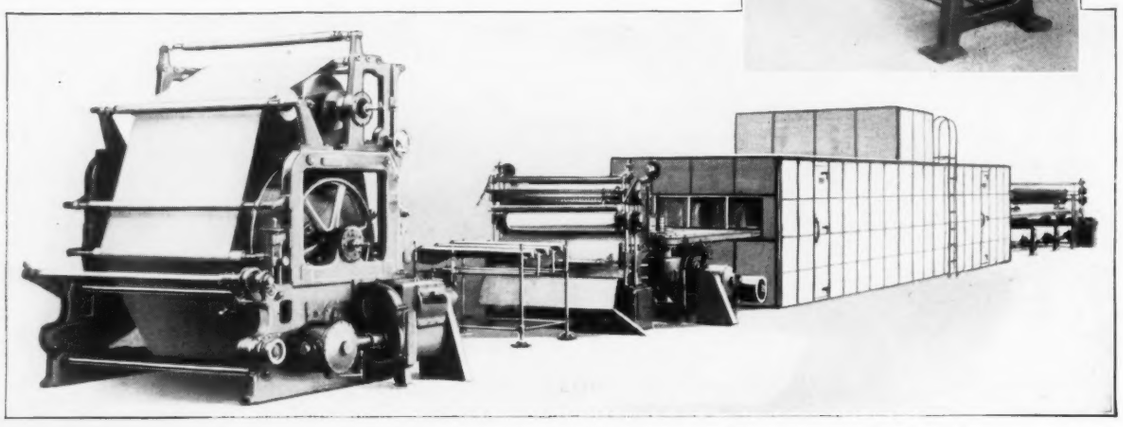
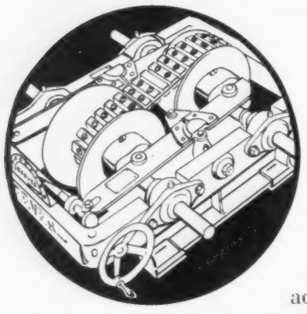


AT RIGHT: REEVES Transmission, with automatic control, on Intermediate Feeding Unit of MORRISON SANFORIZER.



Complete MORRISON SANFORIZER (Built by Morrison Machine Co., Paterson, N. J.)



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Vol. 96 **COTTON** No. 2

February, 1932

W. R. C. SMITH, Publisher
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COTTON

Vol. 96 February, 1932 No. 2

Modernization and Maintenance of Textile Plants and Equipment

By J. E. Hardin,
Secretary and General Manager,
Proximity Manufacturing Co.;
and
Marion W. Heiss

THE MILLS managed by Mr. Hardin are a striking illustration of the effects of a carefully-planned and executed program of modernization and maintenance. It is especially appropriate to present here, therefore, this interesting discussion which gives his views on this important subject, based upon experience, and which tells in part of the work which is being done along this line in his organization . . . . . .

WHEN COMPETITION is keen the achieving of quality production at a comparatively low net cost is the one and only avenue to successful operation. No one in any way actively connected with the management of textile plants at the present time is unaware of the intensity of the competition. The fact of the matter is that conditions have been such as to cause the expression "making a profit" sound like a myth rather than a practical accomplishment; for during the past few years in most textile plants the hope has been to break even or to operate with a negligible loss. Irrespective of the fact that cases of actual profit making have been exceptional, the wide differences which have characterized the financial experiences of mills manufacturing similar products have been most conspicious; and therein lies a story, one which centers chiefly around plant equipment and managerial policies.

The Problem: When to Replace.

One of the most difficult problems confronting textile mill management is the ever present one of determining when, where and how it can best strengthen the mill's position by replacements of machinery and buildings, the addition of modern devices and attachments and the changing of systems and methods. Of course, management's consideration can not be confined to today or tomorrow or the near future. A failure to recognize that what is modern today may be antiquated two years hence is apt to prove financially hazardous. A realization of this makes management's responsibility most intricate. Those entrusted with the affairs of a mill must not only serve in the capacity of industrial doctors and surgeons but as diagnosticians and prophets as well.

Blank-Stoller.

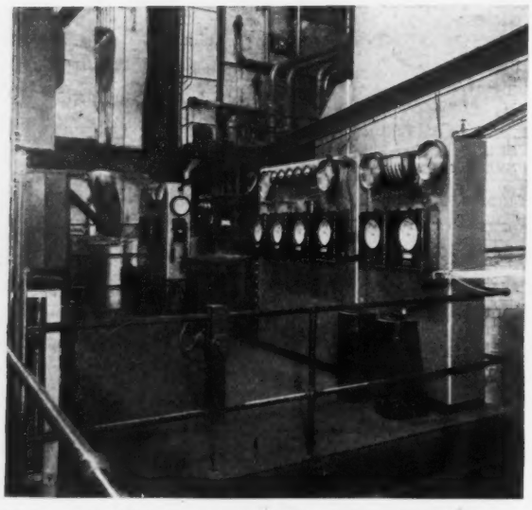
Mr. Hardin.

In considering the modernization of a textile plant the danger of over emphasizing the importance of replacing the old with the new should not be minimized, for even if financially able to do so it would be folly for a mill to make replacements with every new machine that is placed on the market. The automobile affords a splendid everyday example. Each new model has improvements over the previous one but the advantages are rarely ever great enough to warrant trading every year. Not only does such trading cause outright financial losses, but "breaking in" periods are objectionable. Frequent "breaking in" periods in a textile plant do not redound to the best interest of the mill. On the other hand, from a comparative standpoint an old chain-driven automobile though it were as efficient as the day it came from the factory, would have little value today except as a relic. The ability to determine when a machine, a method or a system really becomes obsolete is one of the chief prerequisites of good management. The fact that a loom is in first class condition and is efficient in so far as such looms are concerned does not mean that it is not obsolete. Increased production and better weaving by a new model loom might soon pay for the cost of the new installation and become a cost reducing factor in the plant. A worn-out machine need not be an obsolete one, and frequently obsolete machinery is not worn out. No factory can successfully compete if equipped with either worn-out or obsolete equipment.

Our present day machinery is long-lived from a physical standpoint provided it is properly maintained; therefore, it is

Photo, Courtesy J. E. Sirrine & Co.

The Proximity Print Works Turbine Room. This unit uses steam which has been bled from the main turbines located at the White Oak Station . . . . . .



Operating platform from which the entire boiler room of new White Oak power plant is operated

necessary for a well managed mill to discard very little equipment due to its physical depreciation, but obsolescence on the other hand exacts an enormous toll. The problem of determining when any particular equipment should be replaced is not always an easy one. First it is necessary for the management to be positive of the ability of the considered equipment and to have a thorough knowledge of the benefits of the new over the old. Quality should not be overlooked in the quest for greater production. The length of time necessary for the proposed equipment to pay for itself is rarely overlooked; although different executives do not see alike in that respect. One danger which always lurks is that an improved machine may come on the market shortly after a replacement is made. In such cases mills would have fared better if they had waited a little longer. But after all it is hardly advisable for plants to penalize themselves very long and not take advantage of an opportunity to reduce their costs on account of such fears, for it is not frequent that a mill suffers on account of replacing obsolete machinery; whereas many have already and many more will end on the rocks trying to operate with antiquated equipment in competition with modernized plants.

It is impractical to follow any definite set of rules in considering the equipment of a textile plant from a modernization standpoint. Individual consideration of every piece of equipment is necessary at all times, and judgment based upon long practical experience is essential in working out the fine points which really indicate whether or not it is advisable to replace this machine or that one or whether it is wiser to remodel or to merely overhaul. Insofar as regular standard machinery in the carding, spinning, spooling, warping and weaving departments is concerned, replacements can be considered as profitable, generally speaking, provided the savings (lower unit cost of production) resulting from the installation will be sufficient to pay for the investment, interest and depreciation within a period of ten years. Of course, the quality of production can never be ignored in such considerations. Highly specialized and other less general machinery should pay for itself in less time than cards, roving frames, looms, etc., for usually the value of the former group is destroyed by obsolescence long before that of the latter.

Remodeling instead of Replacement.

Frequently it will be found most advisable from every standpoint to remodel instead of replace. In many instances modern appliances added to old equipment which has been properly maintained will enable a mill, without an enormous expenditure, to meet competitive conditions caused by the introduction of improved machinery. It would hardly be advisable for a mill to discard first-class short draft spinning frames in order to be able to do long draft spinning. Short draft frames can be converted into long draft ones at an expense very much less than that which would be incurred by new installations. On the other hand it would not be wise to add long draft equipment to otherwise obsolete or worn out spinning frames. Single process picking, which is

being generally recognized as the most efficient system of picking today, affords another illustration as to how it is possible for some mills to modernize without the enormous expense of complete replacement. Mills possessing good picking equipment can obtain practically the same results as new installations of single process picking by using one of several successful methods of connecting up old pickers.

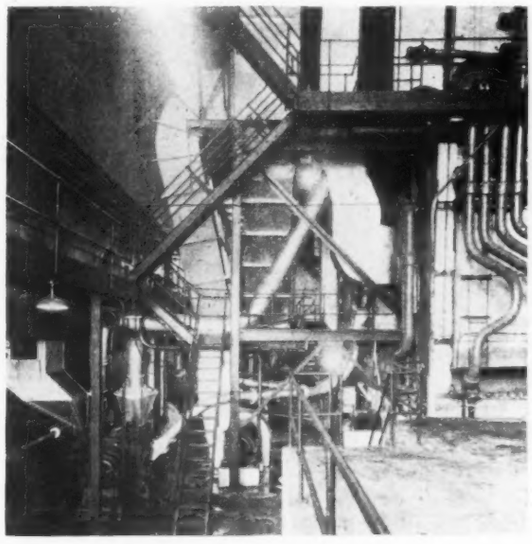
The White Oak Power Plant.

The installations at the White Oak Cotton Mills power plant illustrates a case when it was wiser to replace rather than attempt to remodel even though the expense of doing so was greater. A few years ago it was realized that the steam plant installed in 1904 was not modern or economical. Although the old equipment which consisted of four Corliss engines and 28 water tube boilers were in splendid mechanical condition the company realized that it was obsolete, and that modernization meant replacements. It required approximately eight months to build the plant and get it ready for use. The individual pulverizer system was installed making it possible to use the cheapest coal obtainable, the price of which is much less than that which was necessary for use in the old plant. Space forbids a detailed discussion of the equipment and for the purpose this article is intended it will suffice to say that all new equipment was most modern and so designed as to adequately meet the local conditions. The modernization of the steam plant was not confined to physical equipment for it was necessary to revolutionize the systems and methods of operation and inspection. The results obtained from the new plant proved conclusively that it was expedient for the mill to burn down and sell as junk equipment in first class mechanical condition. The old hand fired boilers had a maximum efficiency of between 55 to 60 per cent. Seven pounds evaporation was obtained per pound of coal. With the new system with water walls, high pressure and super heat the efficiency is approximately 84 per cent and 10½ pounds of steam is obtained from a pound of coal. In addition to that, instead of requiring about 30 pounds of steam per kilowatt hour, as was required by the old reciprocating engines, a kilowatt hour is produced by the new outfit when in full operation at around 14 pounds. Under the system in use the generated steam does three jobs before being returned to feed water. In this case replacement was certainly the only correct method of modernization.

Inadequate lighting systems breed gross inefficiency and in most cases can be modernized only by replacements.

The Relation of Maintenance.

Modernization is one thing and maintenance is another. The latter might well be called the complement of the former, for efficiency and low manufacturing costs are dependent upon both. When a plant has been thoroughly modernized by new installations, remodeling, overhauling and general revamping, the job of obtaining the anticipated results begins; and it is by no means a simple one. Unless a thorough and intelligent system of operation and



White Oak Power Plant: Showing pulverizing mills that supply high pressure boilers with pulverized coal . . . . . .

White Oak Power Plant: Showing two turbine generators, one a 2500-kw capacity, straight condensing unit. The other, a 3500-kw capacity, 450-lb. pressure, double extraction type, condensing . . . . . .

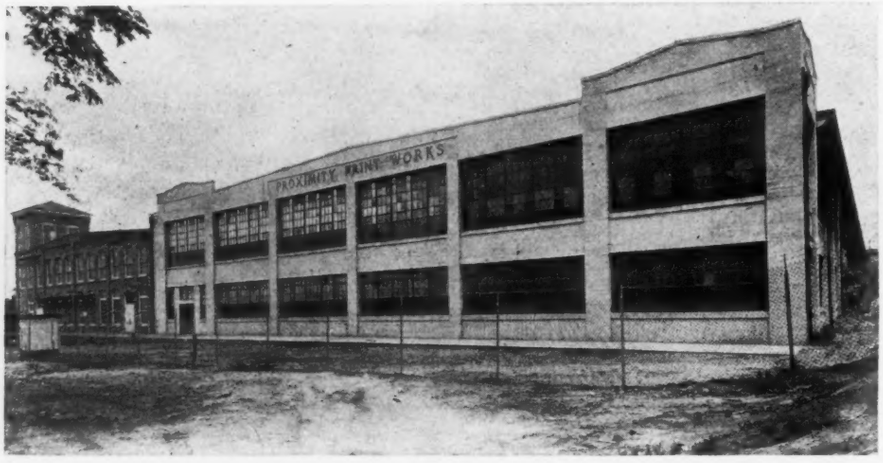
maintenance is put into operation and an efficient iron-clad method of inspecting and checking is scientifically developed the expected results will not be obtained. Not only must the capacity and the other limitations of each machine be known but the factors contributing to a maximum efficiency such as lubrication, adjustments, humidity, etc., should be thoroughly understood.

Modernizing the Personnel.

Even then the modernizing job is in its infancy, for the "proof of the pudding is the eating of it." Regardless of the equipment and executive plans, satisfactory results are not possible unless the superintendents, overseers and their assistants can and are eager to measure up. Their responsibilities are great in a truly modern mill, for scientific knowledge and analytical information must guide them in running their respective jobs. A modern plant cannot be efficiently operated by obsolete key men. With the change of equipment, processes and methods also come certain changes in the duties of rank and file employees. It is of prime importance that the employees be sympathetic toward such adjustments and extensions as are necessary and that they be given a square deal at all times. The advantage of modernization should be explained to them. They should realize that a lower operating cost by their plant means steadier employment and higher earnings. They should not overlook the fact that modern machinery is easier to operate, and that their personal welfare is closely allied with that of their plant. Employee readjustments is a part of modernization, and if a plant fails in that phase the job is far from being complete.

Before purchasing any machine or other type of equipment its adaptability to the plant conditions and its ability to perform in accordance with the standards claimed by the seller should be positively assured. Most machinery firms are eager to make trial installations in interested plants. Such installations enable mills to thoroughly test the equipment and afford a wonderful opportunity of collaboration in making desirable adjustments and corrections so as to take care of local peculiarities, etc. The ironing out of such difficulties before complete installations are made will save plants much expense and unnecessary trouble. During such test periods mills should be relentless in their efforts to determine whether or not the equipment is satisfactory from every angle. Comparative data should constantly be collected; and in this respect it is worthwhile to repeat again that quality of product should not be over-looked. The testing should not be confined to the equipment in question but should be extended through the subsequent processes. As stated previously, most machinery manufacturers are eager to co-operate with mills in making such tests. They realize that satisfied customers are their biggest asset; and then too it is not infrequent that they themselves secure valuable information from test installations.

A certain amount of such experimentation is within the power of practically all textile plants, but with those organizations large enough to do so, the maintaining of a modern research and experimental department is well worthwhile. The average man in a textile plant, having other duties, neither has the time nor the ability to make such tests on equipment and of conditions as are essential to obtain the maximum efficiency of the plant. Such matters as the best conditions of humidity should be constantly studied. Moisture content plays a major role in textile manufacturing, and it should be checked up constantly in the various departments of mills with the idea of establishing most satisfactory standards for each process. Waste, lubrication, supply, weight, breaking strength and speed are a few of the many tests which should be systematically made by parties having the time and ability to scientifically do so. Adequate testing equipment and quarters are indispensable in doing such work.



Proximity Print Works Unit of the Proximity Mfg. Co., at Greensboro, N. C. . .

Photo, Courtesy J. E. Sirrine & Co.

The Importance of Experimenting.

Few textile organizations are at the present time large enough to have a machinery experimental department. Whenever practical the time and money expended in operating such a department is well spent. Technicians are thereby enabled to create new fabrics and work out new styles which will serve the mills in meeting competition. In fact the value of such phases of textile activity is so great

that it is evident that mills so small or otherwise incapable of modernizing in those respects will not be able to meet the demands of competition; and the textile industry will, no doubt, follow the example of many other industries by drifting into a comparative few large chains. This statement is hardly encouraging to small organizations with limited capitals, but many have most likely already seen the handwriting on the wall. They just cannot compete with the large groups which are capable of completely modernizing and efficiently maintaining their various units.

Village Modernization and Maintenance.

In considering modernization many textile plants are confronted with the problem of what to do with their villages. Benefits derived from money expended in village improvements are intangible. Many managements have wondered whether the returns on their village modernization investments will ever justify the expenditures. The answer is No, if they expect to reap actual dollars and cents. If mills through necessity or otherwise own mill villages, they should feel obligated to their tenants (their employees) to provide adequate facilities for a normal comfortable life. Over and above that mills should cut their expenditure garment to fit their financial pattern. When mills are financially capable of doing so it is believed advisable to continuously improve the condition of their villages, for unquestionably such employee consideration does not go unnoticed. Good will and co-operation which are invaluable to efficiency in a plant are traceable to modernization of mill communities. Turn-over, an important cost factor, is always lower in mills having modern mill communities provided other conditions are on a par. Consideration of the welfare of employees is always advisable and such investments by mills capable of making them are certainly sound. Though of less importance than employee consideration, mill village modernization serves as a practical antidote for poison continuously dispensed by professional agitators who make their living by finding fault, and by self-appointed critics who exploit the so-called exploiters for their own self glorification.

A striking example of recent mill village modernization is that of the Cone mills in Greensboro last summer. In the face of the depression, a sewerage system was put in all the villages, bathrooms were built on each house and adequate fixtures installed; and the lighting system was completely revamped. One of the main reasons for such an expenditure at such a time was to help relieve the unemployment situation. These villages have always been well maintained which fact partly accounts for the high type and loyalty of the employees of these mills.

To completely modernize and maintain a textile organization antiquated methods of office procedure must give way to more modern ones. The old currency payroll system has already been discarded by many plants and check paying systems installed. Scientific actual and predetermined cost systems must replace the old guess and average finding methods of determining costs. Modern buying requires more knowledge and skill, and is more effectively done when organizations are large enough to have a separate purchasing department.

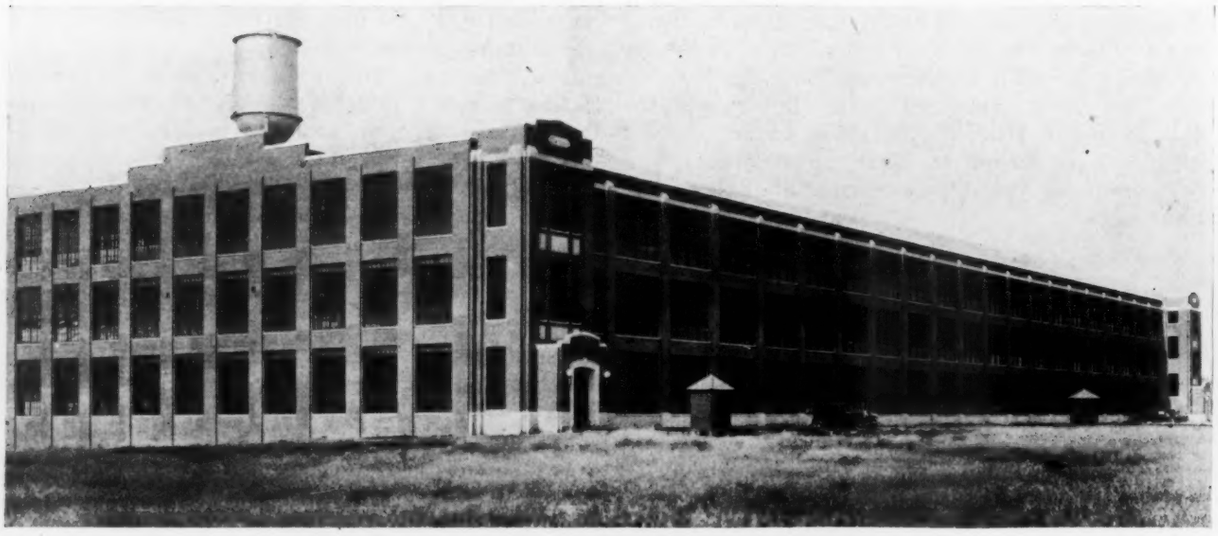
One of the newer additions to the Proximity plant of Proximity Mfg. Co.—a new weave shed . . . . .

Photo, Courtesy J. E. Sirrine & Co.

A management is indeed short-sighted that considers the mere purchasing of modern machinery as the pathway to lower production costs and therefore to a favored spot in the sun of competition. Modernizing equipment is an essential start, for obsolete machinery will soon gnaw the vitals out of any industry; but unless modernization is extended throughout an organization its days of profitable operation are numbered.

Of course, each organization is primarily interested in its own welfare, but whether the individual mills realize it or not the entire textile industry of this country is facing extremely keen foreign competition. It is becoming more and more difficult to cope with this competition. Lower wages and other factors which favor foreign mills make it possible for them to produce at very low costs. In America our hope is through modernization, by more efficient equipment, more scientific operation, and better management. Equipment manufacturers, mill managements, financiers and other affiliated groups must unite in the promotion of American textile interests. Advancement can only come through modernization.

The Recently Completed Mill of



Front view, main mill, Clark Thread Co., Austell, Ga.

Street scene in village, with mill in background.

THE new plant of the Clark Thread Co., Austell, Ga., has approximately 41,000 ring spindles and 24,000 twister spindles with all the necessary preparatory machinery for the manufacture of high quality sewing thread.

The main mill is three stories, 495 feet x 135 feet. The design is steel frame brick curtain walls, wood floors and roof. The only outside ornamentation is a small amount of limestone trim, also on the inside a glazed brick wainscot has been used.

There is a two story cotton warehouse in the rear of the mill, 200 feet x 100 feet, of standard underwriter construction.

The opener room is located in the first floor of the warehouse. The waste room is also in the first floor of the warehouse building and occupies ½ of a standard 50 foot x 100 foot compartment.

The boiler house is approximately 45 feet x 30 feet of brick and steel construction with provision for an extension. There are two 150-hp. Sterling boilers. There is an Alphons-Custodis radio brick stack which has capacity for twice the present boiler installation.

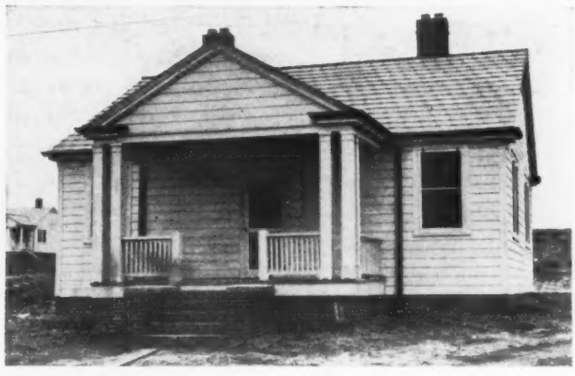
The fire protection system is standard with a 500,000-gallon concrete reservoir located in the mill yard and a 150,000-gallon steel sprinkler tank.

The source of water supply is from Sweetwater Creek, which is about three-quarters of a mile away from the mill. The raw water pump house is located on the creek, water being pumped to the filter plant located in the mill yard. The water is of good quality for both domestic and industrial use and the supply is large enough for any future development that the mill may undertake.

The mill village consists of 59 houses of which 16 are duplex, providing accommodation for 75 families. The village houses have asbestos roofs, copper gutters and flashing and are insulated against temperature changes. All houses have baths, electric lights, baseboard receptacles, hot water heaters and Westinghouse cooking ranges. The village streets are bitulithic construction with concrete curbs and gutters. The village street lighting system consists of units of the Novalux type, mounted on Bishop-Crook brackets on galvanized steel poles. These units are approximately 150 feet apart.

Clark Thread Co., at Austell, Ga.

View from rear, showing power plant, warehouses, and corner of filter plant.



Two types of houses in village, duplex style at left.

The mill and village sanitary sewerage goes into a reinforced concrete Inhoff settling tank, located on Sweetwater Creek about one mile below the intake for the water supply system.

The manufacturing equipment in the main mill is arranged as follows:

Opener Room on first floor of warehouse, Picker Room and Card Room on third floor of main building, Spinning and Winding on second floor, Twisting, Weaving and Doubling on first floor. Opening, picking, drawing, spinning and twisting have individual motor drives, all other machinery with the exception of Foster Winders are driven in small groups with V belt drives. Short center V belts are used on individual spinning and twisting frames. Line shafts in the Card Room are driven with Tex-rope drives. Spinning and Twisting frame motors were furnished by Diehl Manufacturing Company. All of the belt drive equipment and small transformers are from Allis-Chalmers Mfg. Co.

Power is purchased from the Georgia Power Company, the main cut-in to the mill is from the transformer through an underground tunnel to the main switchboard. All wiring in the plant is in rigid galvanized conduit. The switchboard regulators and motor control equipment were furnished by General Electric Co.

The mill lighting system consists of 300-watt glassteel diffusers, mounted 14 feet above the floor, spaced approximately 16 feet on centers. All wiring and electrical equipment was installed by Huntington & Guerry, Greenville, S. C., electrical contractors.

American Moistening Company's High Duty humidifiers are used throughout the mill.

Grinnell Thermalier unit heaters are used throughout the mill.

J. E. Sirrine & Company were the Engineers for the whole project; A. K. Adams & Company, of Atlanta, Ga., were the General Contractors for the main mill and manufacturing buildings, and Fiske-Carter Construction Company, of Greenville, S. C., were the Contractors for the village. The Grinnell Company were the contractors for the heating, humidifying and power piping; W. A. Briggs, Greenville, S. C., was the Contractor for the village paving, underground sewer and water lines.

Modernization plus Profits by SHRINKAGE

By C. L. Emerson, Vice-President
Robert & Co., Inc., Atlanta, Ga.

HERE is offered an idea as food for thought which is refreshing at least for its singularity and originality. Your reaction to it, after reading it, may be that it is visionary; that it is radical; that it is impossible.

Its purpose, however, is an effort to project into the thinking of the industry in regard to the solution of its underlying problems, an idea which may be developed into a permanent correction of some of its evils.

As such, it is presented, and the opinions of readers on the subject, after careful consideration, are solicited . . . . . .

A RECENT REPORT of the Department of Commerce shows the cotton-textile industry operating at about 86 per cent of the full day run capacity. If this be compared with the steel industry at about 24 per cent of capacity an outsider might be inclined to expect profitable operation from an industry comparatively so near normal run. A study of a representative group of annual statements from the cotton mills would, however, cause him to change his mind. Unbridled competition has not created a buyer's market, but a market where only the very strongest can defend themselves from loss.

It appears that no amount of sales effort, under the present conditions of the industry, can avail to secure satisfactory prices for goods. Eventually, the weaker units will be forced out but this drastic process may prove rather slow. In the meantime all manufacturers are utilizing every means to lower their costs of production and the stronger ones are particularly directing attention to methods of modernizing their plants and production methods.

New and improved textile machinery has been developed for nearly every process. Most of this new machinery has a three-fold advantage over the old. It is more productive, it requires less labor, and it makes a better product.

A thorough cleaning and aerating of the stock in the opener room permits the use of a slightly lower grade staple. For several years the process of improving opener rooms has continued until most mills have provided modern facilities, to some degree, at least.

The combination of two or three picking operations into one by means of the single process picker results in a marked saving of labor. Some mills are eliminating dust rooms by means of the Rogers recirculating system which also permits the maintenance of controlled humidity, doing away with the difficulty of uneven lap weights. It is quite an improvement to be able to start the manufacturing operations with a uniform and humidified raw material.

The cards and roving frames have not been materially changed. Long draft spinning has been widely employed on existing frames, and new frames are being generally supplied with this device. The reduction in preparatory machinery again saves considerable labor. High speed spoolers or winders and warpers have many advantages to recommend them, prominent among which is the increased resilience of the yarn and its easier operation in succeeding processes. The saving in floor space is a subsidiary advantage to the saving of labor, but a real one nevertheless.

The general form of the slashers has not been as yet, materially changed, but a much better type of work is being done by means of scientific control of temperature and the consistency and level of size in the size box. Weaving is greatly facilitated when warps come to the loom with round yarn and a moisture content which makes it flexible.

The new type high speed looms are a real contribution to the industry. The heavy, rugged construction and Alemite lubrication reduces the fixing, while the automatic finder for broken warp threads with other devices reduces the work of the weaver and permits the operation of more looms per weaver.

Mr. Emerson.

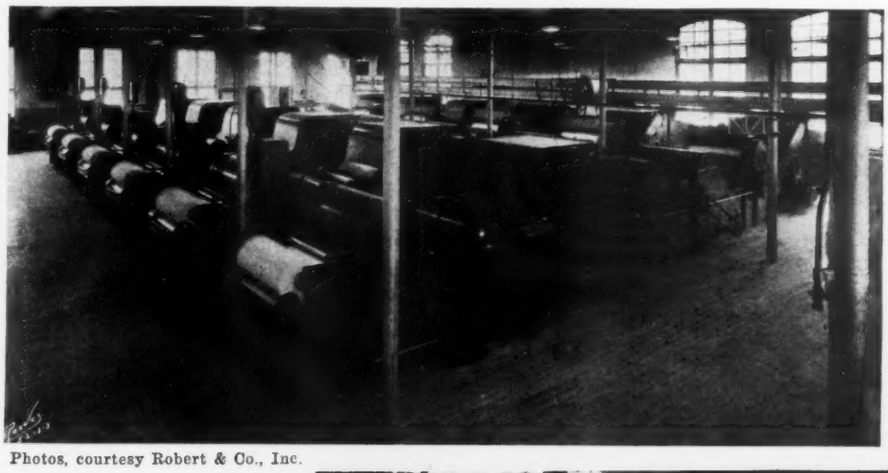
Many improvements have been made in the subsidiary systems, such as heating, lighting, humidifying, ventilating and motor drive. These provide better working conditions for the machinery and may have a cumulative effect of as much as 15 per cent on its production. Automatic control in all of these systems has been advanced to a point where the management may determine the best point of operation, set the system at that point and have the condition automatically maintained.

The same scientific control has to some extent been applied to production methods. Many mills have regular systems of checking machine settings and standard inspection procedure, to spot sources of machine stoppage before the breakdown occurs.

A new plant today, taking advantage of the improved machinery in all processes, would have labor costs considerably below anything in the industry today. The capital expenditure, however, would be

heavy and the fixed charges high; even though buildings and village could be constructed at the lowest price since 1914, at least.

The cost systems used by most mills do not permit a direct comparison in operating costs between machinery which is modern and that which is obsolete. Most plants, particularly the larger ones, have grown by the construction of additions in various eras of prosperity. We, therefore, have in many mills obsolete machinery, reasonably modern machinery and very efficient machinery, operating side by side. The cost system gives the average result for the process and does not differentiate between the three. We are of the opinion that a careful analysis would show that the operation of much of the obsolete machinery is actually losing the organization money and that the loss is absorbed by the efficient equipment.



Six single-process pickers installed by Exposition Cotton Mills as a part of recent modernization program . .

Photos, courtesy Robert & Co., Inc.

Weave shed at Exposition following modernization program. Nearly every machine in the two former units were moved in consolidating the plant into one unit . .

"Shrinking" the Productive Capacity.

Where a concern is not in a position to replace old machinery by the new types described above, it might still be the part of wisdom to proceed to scrap the oldest part of the equipment and leave the area vacant. Probably many mills could remove from 10 per cent to 50 per cent of their equipment and be in an improved position to face the present business situation with the hope of making a profit.

This shrinkage would often permit a better arrangement of the remaining machinery without the necessity for constructing any new buildings. Such advantages as the consolidation of processes, the straight-line flow of work, good light, good ventilation, ample working alleys and plenty of spare floor which might be obtained. Most mills are entirely too crowded, as machinery has been added until the buildings would hold no more, so that such a process of loosening up would be generally advantageous. It would only require time for careful study and planning, together with a little labor.

It would often be possible to recover certain parts from the machinery dismantled, which could be used to put that remaining in better condition. Certain excess parts would, no doubt, go to the stock room, thus reducing, temporarily, the cost of maintenance. Not much book loss would be incurred in dismantling the oldest part of the equipment, as depreciation would already have reduced its appraisal value to a low point. It is also this most obsolete part of the equipment which requires the greatest expense for maintenance.

This shrinkage process in certain mills would leave some vacant floor space, even after rearrangement. This would permit the easy installation of truly modern machinery when business conditions permitted. Certainly there could be no better moment than the present to take the required time to move machinery, overhaul it, and to study better methods of arranging it.

While there might be doubt in some plants as to

the desirability of this sort of modernization on account of some particular situation, we think there is no question but that such a program carried throughout the industry would be a real cure for overproduction.

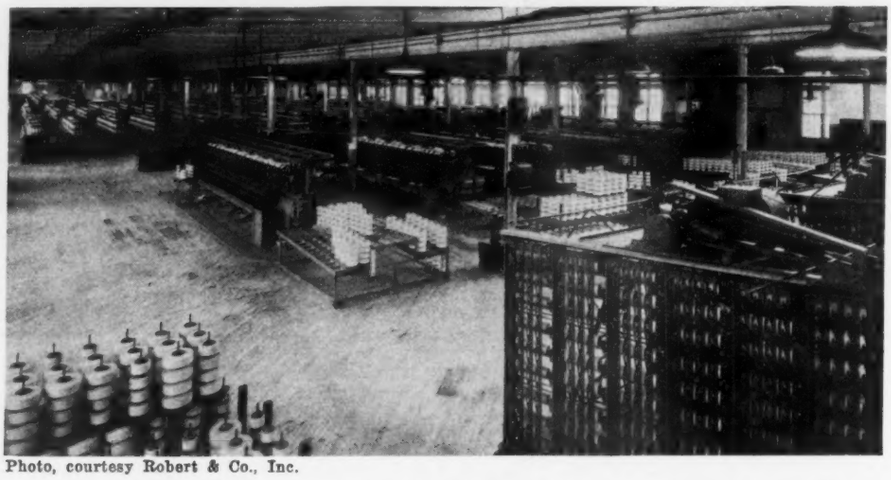
We hear that the textile industry in England is taking steps to reduce the machine capacity in a somewhat different way. It is proposed that a fund of two and a half million pounds be assessed against the industry for the purchase of those plants which are idle, or for some other reason are on the market at bargain prices. It is proposed that these plants be acquired and the entire machine equipment destroyed. It has even been suggested that the British government should be sufficiently interested to assist in raising this fund. It is hoped that some ten million spindles may thus be permanently removed from production. The thought apparently is that a decrease in machine equipment is equivalent to a proportionate increase in orders for goods.

THE textile industry has come a long way from a previous condition of self-centered, ingrown individualism. Co-operative activities of several kinds, notably in the matter of uniform running time, elimination of women and minors from night runs have established a broader sense of interdependence among its individual units.

Activities and accomplishments which several years ago seemed visionary even to the optimistic, have been crystallized into fact. With all of the good accomplished, however, there is yet in the minds of many much to be done to give permanence to the effects of these co-operative efforts.

With this broader, co-operative spirit prevalent, an idea such as that projected in the accompanying article will be received and considered with interest, particularly in the light of the possible trend of thinking it may induce—not necessarily for the absolute adoption of its specific proposal, as for the germination of new thought it provides . . . . . .

manufactured before 1899 would be subject to removal unless some special reason intervened; that machinery from 1899 to 1918 would be kept or removed, subject to its condition and the amount of night operation it had sustained; that any machinery from 1918 to date would be free from suspicion, except for special causes. It might be further agreed that in the average size mill, not less than 8 per cent of the machinery would be removed except where the entire equipment was built since 1918 and further, that not over 25 per cent of any plant would be scrapped unless some means of recompense to the mill could be devised. It would be probable that smaller percentage would be applied to small concerns and larger ones to the big mills. Only very careful and thorough study could determine exactly the general rules and the foregoing are mentioned only as an example of what, among many others, might be covered in the preliminary agreement.



Automatic spoolers and high speed warpers were moved along with other equipment in the Exposition Cotton Mills modernization program

Photo, courtesy Robert & Co., Inc.

If England, with commercial and financial difficulties far greater than our own, can seriously discuss asking the over-burdened textile industry for $12,500,000 to be donated to a plan for reducing machine capacity, it would seem reasonable that we, in this country, might cast about for some plan by which a similar result might be accomplished without expenditure, or rather, for a very nominal sum.

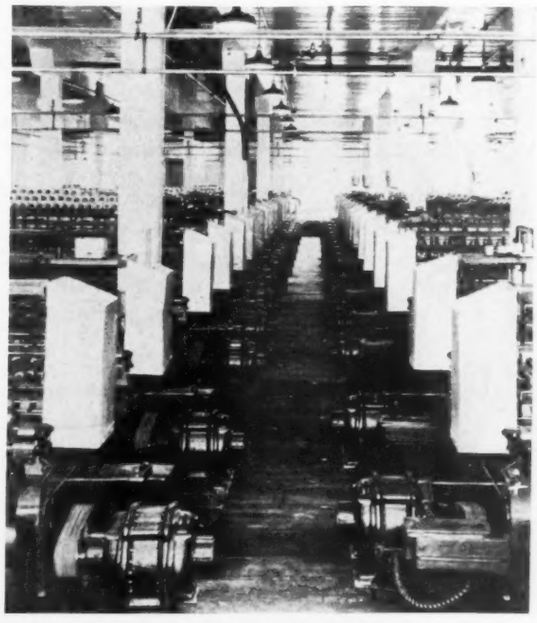
Let us assume for the moment that a fair and impartial and intelligent study has been made of every cotton mill in the country, North and South. All mills would agree to scrap such parts of their equipment as the report resulting from this study should indicate. Certain general principles would be laid down in advance for this agreement. For instance, it might be decided that all machinery, except cards,

After the first report any protests as to special cases would be arbitrated by a board composed of machinery experts, textile manufacturers and engineers. When final decisions had been made in all cases by the board, the mills would be bound to dismantle the designated machinery within a certain time. Certain inspectors would be sent out to the plants to see that the machinery had, in fact, been removed. It would easily be possible to accomplish this result within twelve months, or less, if the mills were willing to co-operate.

The removal of 15 per cent or 20 per cent of the total machine capacity of the industry would definitely tend to stabilize prices, not only because of the reduction itself, but because of the psychological effect on the buyers. It would also mean that as

soon as the volume of business increased even slightly over that existing today, there would be a great stiffening of prices and the mills would find their operations becoming rapidly profitable. There would be a further guarantee of profit in that every plant would be in better position than ever before to obtain low production costs. In the event of prosperity returning more rapidly than is being generally forecast, the mills would have vacant floor space ready for the reception of new machinery. If prosperous conditions existed now, the replacement would be made today, so the only thing the mills are doing, if the idea is carried out, is to permit a lag between the time of scrapping old machinery and the installation of new. This time lag, however, immediately reduces the pressure of cut-throat competition and thus stimulates the industry.

Based on a voluntary co-operation between the manufacturers these results could be accomplished at a nominal cost. A board consisting of some eleven men would be required to supervise the operation and to arbitrate complaints as mentioned above. A large number of field crews would be organized to visit the individual mills. Each crew might consist of four men, of whom three would be machinery experts in the respective lines of carding, spinning and weaving, and the fourth an engineer. Plenty of men are available at this time for such work and it is entirely possible that enough crews could be operated to finish the field work in three months. The arbitrative period might be limited to six months and the actual dismantling and subsequent inspecting completed by the end of the year. Unless some plan of purchasing equipment (beyond the voluntary quota) similar to that considered by England is set up, the total cost of the above procedure should not exceed 2 or 3 cents per spindle for the mills in the agreement. The larger the proportion of the industry joining the agreement, the lower the cost would be per spindle to each mill.



Photo, courtesy Robert & Co., Inc.

Spofford Mills, Inc., Wilmington, N. C.: Long draft spinning installed on existing frames as part of modernization program . . . .

The whole thought may seem somewhat visionary to those who have no faith in the effectiveness of co-operative effort. They will point out the chances of unfairness to some unit after signing the agreement. On the other hand, unless the industry can offer eleven men, who in this time of catastrophe and peril, can sink their selfish interests in its behalf, then it is doomed anyway. Some mills with very old equipment will lose more proportionately than others. The answer to this is that the process of elimination according to the law of survival of the fittest will get them sooner or later and that it is better to survive with half a plant than sink *in toto*. Of course, a real difficulty exists where the physical plant is under mortgage to bankers or others, but it would seem that any reasonable business man would regard a smaller profit making industry as better security for a loan than a collection of antique machinery.

Great efforts have been made toward reducing production by the voluntary curtailment of operations, particularly night operation. Considerable good has undoubtedly been accomplished, but the advantage is regarded generally as temporary. There is a tacit understanding that as soon as increased operations show a real profit, the curtailment program will be forgotten. It is necessary to rebuild agreements as to reduced operation after each flurry of market improvement. Tremendous patience and courage are required to continue this process year after year and those who repeatedly enter these agreements and keep them in good faith finally become skeptical after seeing the repeated backsliding of competitors tempted beyond their strength by an immediate profit.

The foregoing idea is worth considering from the standpoint that if it can once be effected, it provides a curtailment which is positive and irrevocable. If all the work which has been put into the formation of gentlemen's agreements and co-operative elimination of night run could be concentrated on the obliteration of obsolete machinery, it could be done with surprising ease. We believe an agreement could be formulated as a contract which would have sufficient general stipulations to enable the signers to know their obligations thereunder, and yet sufficiently flexible so that the exceptional cases of inequality could be corrected by a fair and impartial tribunal and that enough mills could be induced to accept it to make a considerable reduction in the machine capacity of the industry. Most men when put in a position of trust, exert themselves to be fair, and it is our impression that not only eleven, but hundreds could be drafted from the industry for such a purpose, whose sense of justice would insure an even handed and impartial execution of the plan. The details of method would require much thought but they are only details and can be mastered as such. Perhaps the Cotton-Textile Institute, which has already accomplished much, might be the proper agency to sponsor some such plan.

A Special Survey in Which

Mill Executives Discuss the Value of Modernization and Maintenance

IN ROUNDING out the theme of this Modernization and Maintenance issue, a cross-section of accomplishment along these lines, and opinions as to what should now be done in the textile industry, was solicited by asking a representative number of mill men in the South two questions:

1. What have you done during the past year or two in the way of modernizing manufacturing and other equipment; and
2. What are your ideas as to what mills should do in order to keep abreast of the demands of the times?

A summary of some of the answers, presented here, provides an interesting account of activity along the lines of modernization, especially, and contains some varying viewpoints from leaders in the industry as to what must be done by the industry and by the mills individually.

AN interesting cross-section of what a number of representative mills have done recently in the way of modernization is presented in this compilation of letters. A number of men writing also express their views on what the industry needs most now, along the lines of modernization and maintenance. An interesting point is the similarity between what has been done by different mills, and between what the different executives deem to be the most essential requirements of the industry in the future . .

It is generally thought that conditions in the industry emphasize more than ever the need of modernization, the elimination of obsolete equipment and methods and units and individuals; that the "theme song" of the industry's progress in the near future must pertain to these activities rather than incremental expansion. This naturally lends additional emphasis and interest to the survey of fact and opinion found in the excerpts of replies which are appended:

Gaffney's Improvements.

"We have been spending within the last few years quite a good deal of money on new equipment and overhauling the old machinery, trying to get the highest efficiency possible from our plant," reports C. L. CHANDLER, superintendent, Gaffney Mfg. Company, Gaffney.

"We have thrown out some of our old A and B model Draper looms and have replaced them with 864 new E model Draper looms. At this time we changed our drive for these looms and put in motors for each line of shafting with a Tex-rope drive which we think is a big improvement over the old drive that we had.

"We have replaced all of our old spooling and warping with Barber-Colman high-speed spooling and warping. We have thrown out all of our old humidifying system and have put in a complete installation of the Bahnson humidifying system, including master controls throughout the plant. We have changed one mill to Saco-Lowell one-process picking and we have also thrown out all of our old slashers and have replaced them with Saco-Lowell slashers and have equipped these slashers including kettles, with Taylor Instrument temperature controls.

"We have spent a good deal of money putting on card clothing, re-clothing flats and general overhauling in the carding and spinning, which we think has been money well spent.

"At this time, when competition is so keen in the cotton mill industry and the margin of profit so small, I do not believe that we could have operated our plant during the last two or three years if we had not spent the money which we have spent for improvements.

"Our original building was built in 1892 and was only 75 feet wide. When we decided to buy the new looms we wanted to buy them equipped with a 22-inch beam head and we could not get these looms placed in the old mill like we wanted them. We first figured on having the old building re-modeled, but after going into the matter, decided that it would be better to build a new building outright, which we did, and we now have a modern building which has ample space to take care of the looms with a 22-inch beam head.

"We have spent a great deal of money on our mill village. Within the last two years we have built about 30 new houses. The majority of these houses are of brick construction and have all modern conveniences. These houses are replacements of some of the older houses that we had which were torn down as we felt they were not worth repairing."

An Opinion from New Orleans.

"We have done everything that has been possible in the line of saving and increasing production," says W. C. RYCKMAN, superintendent, Lane Cotton Mills Co., New Orleans, La.

"Every point has been stretched to get the maximum efficiency and at the same time we have made it our task to keep our high standards intact.

"What the future has in store for us and the balance of the textile industry is in my estimation a closed book. The consensus of opinion is, however, that conditions will have to get back to normal, that is, pre-war conditions, before business can be stabi-

lized. Dividends, salaries and wages will eventually come down to the selling basis of commodities, taxes alone holding their own and perhaps going higher.

"Many of the surplus mills, especially the antiquated ones, will be closed and junked, and the balance that are able to pass through this period of reorganization or rejuvenation of the industry will have to increase their efficiency to the *nth* degree.

"Labor-saving machinery of all descriptions will be installed. The one-process picker, long draft spinning, automatic spoolers, high speed warpers, and high speed looms will constitute the equipment of the successful mill."

New Warp Preparation.

JOHNSTON MCCORKLE, superintendent, Scottdale Mills, Scottdale, Ga., reports that, "about two years ago we built an addition to the mill. At the time of doing this we re-arranged our machinery so as to handle the stock better and also to get more floor space. Our present engine did not take care of the additional machinery, so we electrified part of the mill. We replaced the old style spoolers and warpers with winders and high speed warpers, and also put automatic controls on our slashers and cooking kettles. In addition to this, we installed new humidifying equipment with automatic controls. We added to our card room machinery and spinning room machinery and also added some looms. This latter was done as an addition and was not part of any replacement program."

W. B. PICKARD, agent, Indian Head Mills of Alabama, Cordova, Ala., succinctly stated that "my idea as to what the mills should do to keep abreast of the times is as follows:

"Discard obsolete machinery.

"Arrange workers' jobs so that the maximum number of machines can be handled at the maximum efficiency.

"Arrange speeds so as to produce the maximum poundage at maximum efficiency per machine, thereby reducing cost per pound.

"Maintain a systematic inspection in each department to keep machinery in A-1 condition."

JOHN A. LAW, president, Saxon Mills, Spartanburg, S. C., briefly reports that, "our more recent improvements in equipment at Saxon have been the installation of Barber-Colman spoolers and warpers, and of Saco-Lowell single-process picking, as well as the installation of additional cards so as to be able to operate carding at lower speed."

Improves Dyehouse Equipment.

DONALD COMER, president and treasurer, Avondale Mills, Birmingham, Ala., says that, "During the year we have modernized our opening room and picker room equipment; we have begun installing Barber-Colman spooling and warping equipment in several of our plants; we have begun replacing some of our oldest spinning with new spinning and have been experimenting in rather a large way with long draft spinning.

"We have also modernized our indigo dyeing plant and are experimenting with some other modern equipment. We propose to continue this program into 1932.

"I believe that the more modern we keep our machinery and our manufacturing equipment, the sooner we will be able to help our industry into shorter hours and into a higher wage scale."

View of a Modernized Spinning Room . . . . .

Photo, courtesy Robert & Co., Inc.

A Mercerizer's Opinion.

From the finishing end of the industry comes the following report from BURTON F. MITCHELL, superintendent, finishing plant, American Yarn and Processing Company, Mount Holly, N. C.:

"All our efforts in the way of modernizing our plant for the past year have been directed to better mercerizing. In the mercerizing department we have added temperature controlling devices, water softening equipment, automatic acid control machines by Leeds and Northrup Company, electric caustic controlling equipment by Bailey Meter Company, and several other small devices.

"My idea in regard to the future is that all mills must discard obsolete machinery and replace it with the latest automatic machines. In order for a mill to survive in this day and time it must not only make the very best yarn or cloth, or best of whatever it produces, but it must have a low manufacturing cost.

A low manufacturing cost is hard to get with old machinery."

W. W. NORMAN, secretary and assistant treasurer, Georgia-Kincaid Mills, Griffin, Ga., reports the following recent improvements in the way of new machinery:

"New opening and picking machinery, 100 per cent.

"New long draft spinning (partial).

"New modern looms (partial).

"High speed warping and winding (partial).

"We have also just completed a program of re-arrangement of machinery so as to give better efficiency.

"It has always been our custom to keep up repairs on our properties, buildings and machinery, and during the past few years we have not slackened in this respect."

A Fine Yarn Mill's Ideas.

An interesting report from the fine yarns division comes from GEORGE R. WEST, JR., general manager, Dixie Mercerizing Company, Chattanooga, Tenn.:

"We try at all times to keep abreast of the times on our manufacturing methods and equipment. We have recently purchased some high speed winders, as well as some test frames to put on self-oiling twister rings. I am not as yet thoroughly convinced that long draft spinning has completely made obsolete the type we now have; I speak of course, as one familiar with and interested in the spinning of long staple cotton. We have every intention of keeping our mill in good shape, both as to methods and improved machinery."

NEW model looms, improved slasher control, long draft spinning, one-process picking, improved testing and control equipment for the finisher, better opening equipment and arrangements, modernized dyeing and finishing equipment—these are among the major mechanical improvements listed here as a part of modernization programs.

Adequate maintenance programs applying to the mill and to the village are also urged by men who are endeavoring to carry out this phase of efficient management at their own plants . . . .

Captain Meikleham's Opinion.

HARRY P. MEIKLEHAM, agent, Pepperell Mfg. Company, Lindale, Ga., thinks that, "as a whole there has been very little done to keep the textile industry in an adequate position to meet the requirements of the times. I should say that the majority of cotton mills are not especially interested in keeping their plants in the very best physical shape possible. They are more inclined to keep their plant up just enough to keep it running, and if they make any money, pay it out to the stockholders, or put an addition on the plant which they do not need. The textile industry is rather inclined to charge off depreciation, and not use this money for keeping their plant up-to-date.

"I think a plant twenty years old should be practically in as good shape as the day it was started up, with the exception of machinery that is out of date by improvements. My experience has been that from every 15 to 20 years there has been quite a change in cotton mill machinery, besides, there is quite generally a difference in the class of goods you are making, and you are trying to run these goods in a mill equipped for a different kind of goods. I think whenever improvements in machinery are necessary for the class of goods you are making, and you can make better goods and make a substantial saving in the cost of making them, you should re-vamp your plant.

"At the present time we are renewing all of our spindles with long draft spinning, because, with the type of cotton we are using, the class of goods we are making, and the saving in the cost of manufacture, it is the logical thing to do.

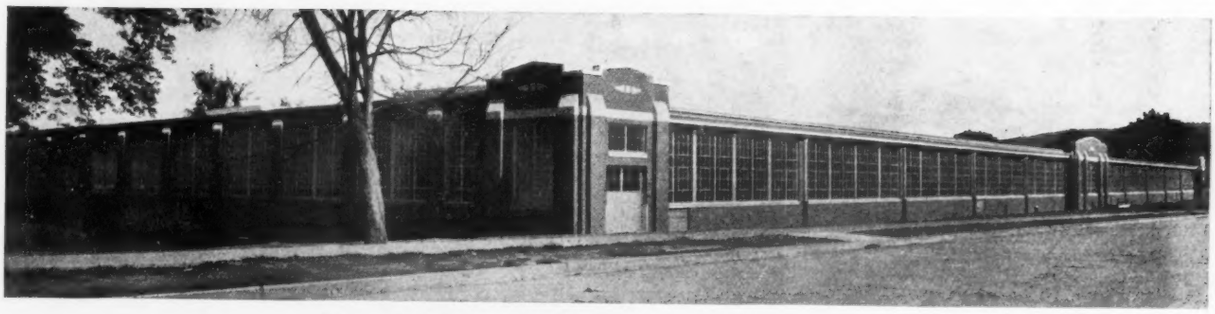
"I do not think that a mill that is in excellent physical shape should make any changes unless they know exactly what they are doing, why they are doing it, and what they can gain by it. Of course if the plant is run down, and has never been kept up, they then have got to buy new equipment to keep operating, but, no well run plant should ever be in this position."

C. E. HATCH, vice-president, Brandon Corporation, Greenville, S. C., operating plants also at Woodruff and Travelers Rest, S. C., writes that: "Some years ago we put in the Barber-Colman spooling and warping in all of our plants, and in the last year or two have put in one-process picking, modernized our opening rooms and put feelers and electric three and four-bank stop motions on a great many of our looms.

"We should like to replace a great deal of our oldest machinery with new, and expect to do so when conditions permit. We believe that most of the mills in this section have made a mistake in not spending more money in the past in keeping their plants strictly up-to-date. We believe that adequate depreciation allowance should be charged off each year, this sum to be put in a fund to be used for no other purpose than modernizing equipment. Only the mills that follow this plan, in the future, are going to be able to survive, as we believe competition will be very much keener than it has been in the past."

"We have done a great many small things, such as re-clothing some of our cards with straight-tooth card clothing, having fly frame spindles and flyers overhauled, straightened, re-pointed, etc.," said C. S. TATUM, secretary and manager, Pilot Mills Company, Raleigh, N. C. "On account of changing the nature of fabric manufactured at this plant somewhat during the last two or three years, we have had to make a number of changes such as double creeling our spinning, and have to throw out some ball warpers and substitute for them beam warpers. In the weave room we have installed a large number of dobby heads, and in the finishing department have had to put in a combination calender so as to get various types of finishes required.

"We believe that now is a very good time for mills to bring their plants up-to-date in every way possible, as most improvements can be made cheaper now than in normal times. We find this especially true in painting and re-roofing work. At the present time we are



New Building for the Trion Co., Trion, Ga.

This recently completed additional fabricating plant for The Trion Co., Trion, Ga., is one story, 505x230 feet, is of daylight construction, cast iron columns, steel floor and roof beams. The heating system is the floor type of Carrier-York diffusing units, which are automatically controlled by a thermostat on each unit. The building was designed by J. E. Sirrine & Company, engineers. A. K. Adams & Company, Atlanta, were the general contractors. C. M. Guest & Sons, Anderson, S. C., were the heating contractors, and Huntington & Guerry, Inc., Greenville, were the electrical contractors . . . . . .

spending considerable money on our village, painting and re-roofing houses. Labor of this type is considerably cheaper."

Long-Draft Spinning.

NORMAN E. ELSAS, secretary, Fulton Bag and Cotton Mills, Atlanta, Ga., advised that, "our company has gone to a very considerable expense in overhauling and putting into first-class condition, equivalent almost to new, all of our manufacturing processes.

"We completed during this last fiscal year the complete installation of Barber-Colman automatic spooling and high speed warping, having had this equipment installed in one mill for about six months previously for trial before completing the installation.

"We have also installed several thousand spindles of the Roth long-draft spinning, and probably will extend this further.

"Of course our new picking equipment is just a little over a year old, and we have obtained remarkable results from its use, with controlled humidity due to the re-circulation of air and careful conditioning at this process.

"There is no question but what mills who enjoy a strong financial condition must make investment in modern equipment, and particularly in times like these we are now experiencing. Such money invested in modern machinery can yield far greater returns than used for the purpose of Government or other securities—particularly when such new equipment and replacements can be obtained at such a low cost level.

"There are probably any number of other items that do not come to mind just at the moment, but I have heard of very few strong mills who have not actively pursued the same policy."

The plant of the Bemis Brothers Bag Co., at Talladega, Ala., is too recent to have involved much modernization, but R. A. WELLS, manager, states that, "probably the next big change that will take place in mills and, in fact, is already taking place, is so-called long-draft spinning; although we believe this will be very much simplified eventually, say to a three-roll system like the present system and all the various 'contraptions' which now appear on the long-draft frames will disappear."

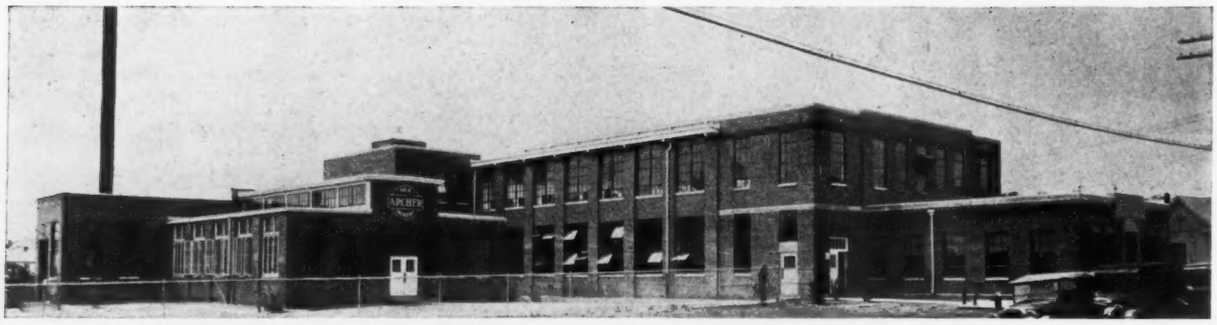
Ideas on Maintenance.

A Georgia mill man makes the following interesting contribution:

"We have not made any changes in our machinery, but have taken advantage of the present conditions to put our equipment in the pink of condition. We have been experimenting with long-draft and have of course a good many ideas of what we might do under different business conditions. What can be done in the changing of equipment depends altogether on the efficiency of the machines in the mill and as to whether you are getting full production and efficiency from these machines. We know of some instances where one mill is getting a great deal more efficiency from the same type and age machines than another, therefore, the question of management will have a most important bearing on whether the machinery should be discarded in favor of newer type machinery.

"Newer type machinery would of course run with more efficiency and probably at higher speed, but whether it would pay to discard old machinery in favor of the new would, of course, depend entirely upon the saving which could be made. We feel that one-process picking or the coupling of the present pickers together, under the right conditions, would show substantial saving. It is also entirely possible that larger packages in the card room and longer drafts in the spinning room would make substantial savings.

"My personal opinion is that the greatest saving that can possibly be made in the majority of mills can come from the careful study and re-arrangement of help throughout the mill. I further feel that the cutting of cost does not entirely depend on the cutting of wages and that the proper study of labor organization and the re-arrangement of same to give a man a full job, will show as much saving in the manufacturing cost as the purchase of new machinery, provided, of course, the machinery is not obsolete. When making help re-arrangements, it is a mistake to overload any particular job, as no employee can do his best work when he is overloaded.



Archer Hosiery Mills, Columbus, Ga., makers of circular knit and full-fashioned silk hosiery. Lockwood Greene Engineers, Inc., were the engineers . . . . . .

"Regarding the upkeep of the property in the village, such as cottages and mill buildings, it is the writer's idea that there should be a regular maintenance schedule which should be strictly adhered to, even though present conditions do not warrant the expenditure of much money, feeling that if such a schedule were maintained over a period of five or six years the up-keep cost would be much more favorable than if the attempt were made to overhaul and paint them every two or three years and then forget about them for two or three years."

Another Georgia man states that "Our mill is a fairly modern mill, having been completely re-vamped in 1927. However, we have shifted machinery where necessary to economize in labor, have enabled our labor to be more productive per operative by installing labor saving devices where possible (the bunchless cleaner is an illustration of this) and have eliminated every useless operative in the mill. The last means a reduction of jobs in the mill. Everything found possible up to date has been done to reduce costs but quality has been maintained or improved to the highest point. We believe machinery and other equipment should be kept in the highest state of repair because we think to maintain high production and best quality at the lowest cost it is necessary and cheaper in the end to do so."

The executive of a group of Carolina mills says:

"We are glad to state that during the past year or two we have put in a complete equipment of one-process pickers in four of our mills. We have been very much pleased with the operation of these machines and intend going ahead with some additional replacement work. We consider it very important that southern mills keep their equipment up-to-date, and we feel sure there will be a great deal of this work as soon as conditions justify the expenditure."

Turning now to the knitting industry, we have the following comments from GUY H. NORTHCUTT, treasurer, Champion Knitting Mills, Marietta, Ga.:

"We have within the past two years completely revamped the layout of our mill from top to bottom. Our knitting department has been divided into smaller groups with individual motors, ball bearing hangers, silent chain drives, etc. The capacity of our finishing department with the addition of some dyeing machinery and boards all carefully re-arranged, has been doubled.

"We have also put in Bahnson humidifiers throughout, as well as a new thermostatically controlled heating system.

"It has always been our custom to maintain our equipment up to the highest and latest standard for the manufacture of men's fancy patterns."

C. S. KINCAID, president, Magnet Mills, Inc., Clinton, Tenn., reports that: "We have, during the past year, installed a Parks-Cramer system of air-washing, heating and conditioning, added a specially constructed and equipped silk conditioning room; hot water forms in place of steam; equipped all full-fashioned machines with picot attachments; added seventeen 45-gauge machines for making the latest improved type of mesh hosiery; and replaced mazda with Cooper-Hewitt lights on one of our full-fashioned knitting floors."

C. E. SPIVEY of the Scottsboro Hosiery Mills, Scottsboro, Ala., manufacturers of seamless and full-fashioned hosiery, says:

"We have cut our overhead about 20 per cent and our direct labor cost about 20 per cent, and at the same time we have tried to modernize manufacturing by adding some new equipment, which every manufacturer will have to do to cope with the times. We have recently made some changes in our processing which have increased our production about 15 per cent, with no additional cost; simply by putting certain systems in which eliminate back lash, and from the time the work leaves the knitting machine, it goes straight through the plant until it is shipped. During the past year we have spent approximately $10,000 on a new power plant. We have installed two 150-hp. boilers, and moved the power plant into a new building, using the old space for dyeing. Any mill executive, to keep abreast of the times, is going to have to work out his trouble.

T. TARWATER of Harriman Hosiery Mills, Harriman, Tenn., says, "We have made more changes in the past six months in the various processes of manufacture in an effort to increase efficiency than we have in several years previously. Looking back since these changes were made, we can see where we had gotten into some very bad ruts. It is our opinion that only those mills with the greatest efficiency in manufacture will be able to weather this economic depression that is now prevailing throughout the world."

Trends in Depreciation

By E. G. Field
Wm. H. James & Associates

THIS is a very timely discussion of a subject which should receive more careful attention from textile manufacturers. It stresses the need for a complete depreciation program, including the relation of depreciation and maintenance, the retention of depreciation funds available for replacements, the preparation for obsolescence, and the selection of an adequate equipment policy . . . . . .

THE FEDERAL GOVERNMENT is busy searching ways to increase the revenue from the income tax. Regardless of the changes that may be made in the tax law, those responsible for the collection of the income tax have been giving thought to the limitation of the depreciation allowance as one way in which the tax may be increased. Following their study of the returns over a period of years, the tax department invited the leading industrial associations to meet with them and discuss a program of rates for their respective industries. Some of the industries have set up uniform percentages for depreciation allowances. Other industries have not attempted to apply uniform rates throughout their membership. From the additional assessments issued by the federal tax department in the past year it is quite apparent that there is to be a drive against depreciation in excess of certain rates, averaging about 3.5 per cent as a composite rate.

While most mills may take exception to any such rates, it is surprising to note the number of mills that are directly assisting to lower the customary rates by the way in which they individually are handling their depreciation problem. Some mills already have accumulated large depreciation reserves while claiming that their machinery is in very good condition and fitness, and if true, this would tend to prove that the rate of depreciation has been in excess of that demonstrated by the individual experience. In examining a great many financial statements, it is impossible to locate the present disposition of depreciation funds that should be available, in support of the depreciation reserves shown in the balance sheet. Since the individual companies do not take seriously their condition, as to the amount of depreciation that has been claimed, their statements add more evidence that may be cited as a further example that the past depreciation rate was thought excessive or else the arrangement for replacement is very much misunderstood. Finally, there are quite a number of mills making returns showing a change in their depreciation policies in that they have reduced the amount of depreciation claimed in 1931 or have omitted all claim for depreciation during this depression year.

Admitting for the moment that a composite rate of 3.5 per cent might be sufficient for a depreciation allowance in some cotton-textile mills, it is necessary to consider two other factors: (1) the policy of maintenance and repair, and (2) the provision for obsolescence. There is such a pronounced relation between the maintenance and repair expenditures and the amount of depreciation attending wear and tear, that it is impossible in practice to standardize upon one without also considering the other.

There are some maintenance items, more in the nature of supplies, that vary directly in relation to the hours run. Other maintenance and the repairs that continue the equipment in good condition will permit of lower depreciation rates than should be used by a company that does not adequately maintain its equipment. At present there are many mills that are acting just opposite to this suggestion, in that they are reducing the expenditure for maintenance and repair while at the same time cutting down on the depreciation charge.

According to the wording of the income tax act it is intended that the depreciation allowed shall provide for both the wear and tear and the obsolescence. Since the rates being claimed by many of the mills are very low, the rates that are being applied to the textile industry do no longer provide for obsolescence. The practice of the income tax department has been developed to allow for obsolescence whenever it can be proven to have been sustained by taking the loss through actual replacement. Such a practice works a distinct hardship upon the mills as it is sometimes difficult to demonstrate obsolescence in part, where the whole unit remains intact, and especially in that it forces the mill to take the obsolescence in a lump rather than providing therefor according to a regular manner in the preceding years. The new mechanical developments in textiles have been making considerable equipment obsolete and will continue to bring about more equipment changes. Companies rehabilitating their equipment are faced with the taking of obsolescence in a year when there is no income against which to apply the obsolescence. While the loss can be carried forward for two more years to apply against profits in those future years, there is now some possibility that the tax department may seek a change so as to stop carrying losses forward.

The mills have not been paying sufficient attention to the possibilities of equipment obsolescence, and the usual depreciation rates do not provide therefor. If low depreciation rates properly applying to the mechanical life of the equipment are to be retained, then it is necessary that another rate must be applied to provide for the probable obsolescence in order that the operations shall earn the replacement of the equipment within the shorter period of its practical economic life. This relation of obsolescence and economic life is now of much more importance than the wear and tear and should be in the foreground of any equip-

ment policy.

There is another form of technical obsolescence that has been very much overlooked in the past. Business obsolescence brought about by changes in purchasing methods, customer desires, competition with other industries, etc., frequently makes extensive changes in equipment and facilities necessary in order to continue in a reasonably profitable business with new products or new lines. Many cases of this nature have been experienced, especially in the textiles going to the tire industry, where the manufacturer was required to go to considerable expense involving extensive changes in equipment in order to furnish products specified by the customers. Provision must be made for this form of technical obsolescence from product changes if the manufacturer is to retain sufficient financial strength to properly meet the customers' demands in a manner that will continue reasonably profitable to both parties.

In practice there has been developed a method of handling the accounting for the removal of assets that is open to question when its significance is fully considered. The depreciation rates selected in the textile industry are, in general, intended to be used as average experience rates applicable to the composite total of all the items included in the same classification. The rate for the group was never intended to apply equally to each of the individual items that make up the group. Accordingly it should be apparent that there is properly no gain or loss, taxable or otherwise, attending the removal of any individual items taken from a group, since any remaining portion as a result of the removal should be entered directly to the depreciation account in order that the composite rate may be demonstrated by full experience. The customary accounting treatment applied to the removal of a partly depreciated unit, results in a remainder that is carried to the profit and loss account, but this disposition was never intended when the group rate was selected. It presents an inconsistent case similar to that which would prevail should a life insurance company attempt to show a loss on the man who dies early and a profit on the man who lives well beyond the average life expectancy for his group. There is need for the application of actuarial thought in the handling of depreciation.

When computing the amounts of depreciation some authorities advocate that all depreciation and obsolescence problems must take into consideration the current replacement value. Needless to say, the value at the future date of replacement is of the more importance. While there is much to be said in favor of this theory of the "variable dollar," it should be kept in mind that there are other economic and practical considerations also to be included. Most of the equipment is not going to be replaced because it wears out, but it is going to be thrown out due to obsolescence. Thus, it must be kept in mind that replacements are not *in kind* but are by a superior equipment. The new machine does usually provide for more production per delivery or has other advantages which should more than compensate for any changes in the purchase price.

It is regrettable that many of the associations have placed their emphasis upon some of the debatable features such as depreciation upon replacement value and have in that way taken positions that are so far in advance of the accepted practices. To the industry it would have been much more profitable had attention been given to the extension of customary good practices accompanied by practical progressive steps. More attention should be given to the adoption of a complete depreciation program, including the relation of depreciation and maintenance, the retention of depreciation funds available for replacements, the preparation for obsolescence, and finally to the selection of the equipment policy that will continue the industry most profitably.

Cotton Styles for Spring

The accompanying photographs, by Joel Felder, indicate some of the styles in cotton for the Spring. Left, a "Martha Washington" reproduction in pink organdie over a beruffled petticoat; with bertha of real duchess point lace. Right, sports dresses of cotton seersucker; stitched pique sailor and jockey cap of red and white cotton suiting. These photographs were furnished by Cotton-Textile Institute . .

ARC WELDING in the Cotton Mill

By A. F. Davis, Vice-Pres.,
Lincoln Electric Company

THIS is a brief and interesting description of the many uses to which arc welding may be put in and around a mill. It cites specific cases of instances in which this ally to economical management has proved to be a saver of time, money and production. A subsequent discussion, planned for later publication, will discuss the application of this useful instrument to other branches of the industry. . . . . .

PROBABLY few manufacturers in any line of industry have ever fully realized the tremendous importance of the maintenance department. A tool wears out, a machine breaks down and either replacement or repair causes a costly delay in production while overhead continues. It is not the purpose of this article to go into the subject of economical maintenance or to explain why machinery breaks. This exposition will cover one tool, which, when added to the maintenance equipment almost invariably becomes the instrument of the tool builder and eventually in many lines of manufacture may become an element in production. The reference is made to the electric arc welding machine and equipment.

Wherever metals are joined, the electric arc process can make a strong, satisfactory connection in a short time. To those not familiar with the process it is simply this: the metals to be joined are placed in position, cold. The welder operator covers his eyes and face with a protective shield and touches an electrode to the work. There is a flash of blue white light, a faint hissing and the work has been heated to molten temperature so that the metal runs together mingling with the metal which burns off the electrode. Except along the line of fusion the temperature of the metal is not greatly increased.

The process is spectacular and efficient. A good operator can make a connection between mild rolled steel plates or bars which are stronger and more ductile than the metal itself.

That means that in maintenance, production or construction separate metal members can be fused into a single unit in the minimum of time. Today skyscrapers, houses, machinery of all types are of arc welded construction. There is no industry where metal is either a tool or a product where the economies of the process are not applicable.

Moving parts are among the first to show signs of wear. Fig. 1 shows better than can be told in words, two uses of the electric arc process in the textile in-

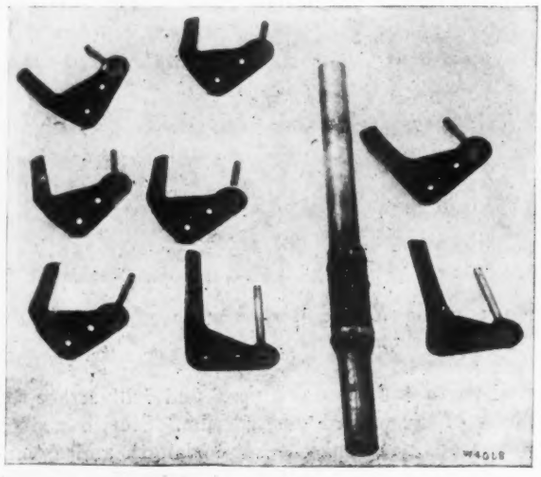
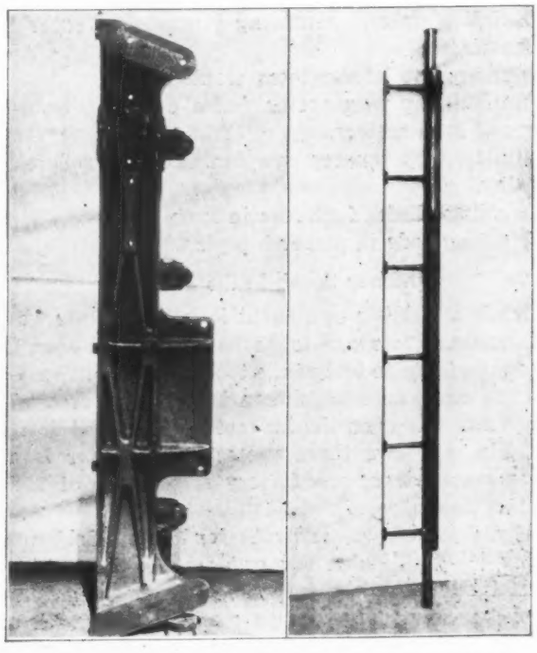


Fig. 1. Shuttle supports repaired and motor shaft rebuilt by arc welding . . . . .



Left, Fig. 2, rocker shaft bearing saved. Right, Fig. 3, card comb repaired by arc welding . .

dustry. Eight shuttle supports are shown. In each of these the pin has been fused into place with the arc and the excess metal ground off. The shaft shown in Fig. 1 has been built up with weld metal. Machining will bring it down to its normal size. Small items, both of them, but in a year the economies gained by such repairs count up, both in time and money saved.

A more striking example is shown in Fig. 2, a cast iron rocker shaft bearing for a warper. Repairs were made by fusing the broken pieces together with the arc. The whole machine was out of service less than a day. Fig. 3 shows a card comb which was repaired by the electric arc process.

The four examples shown are merely examples of what can happen and how repairs can be made without loss of time and at the minimum of expense. The use of arc welding is an assurance of quick and inexpensive emergency maintenance. Today welding electrodes are made for use with practically every metal, including light sheet steel, cast iron, aluminum, stainless steel, chrome molybdenum and other alloys. Abrasion-resisting carbon steel or manganese steel wearing surface can be built up with special electrodes. In the plant of the writer's company the same welding machine which built up a high carbon deposit on a steel rail was used to repair an executive's automobile fender.

A list of a few of the textile uses for arc welding equipment in the field of maintenance follows:

Building up and machining sand roll.

Building up and returning journals on cover for fly frames.

Building up broken loom crank shafts.

Building up worn motor shafts, especially on spinning and loom motors.

Building up squares on spinning frame rollers for refitting.

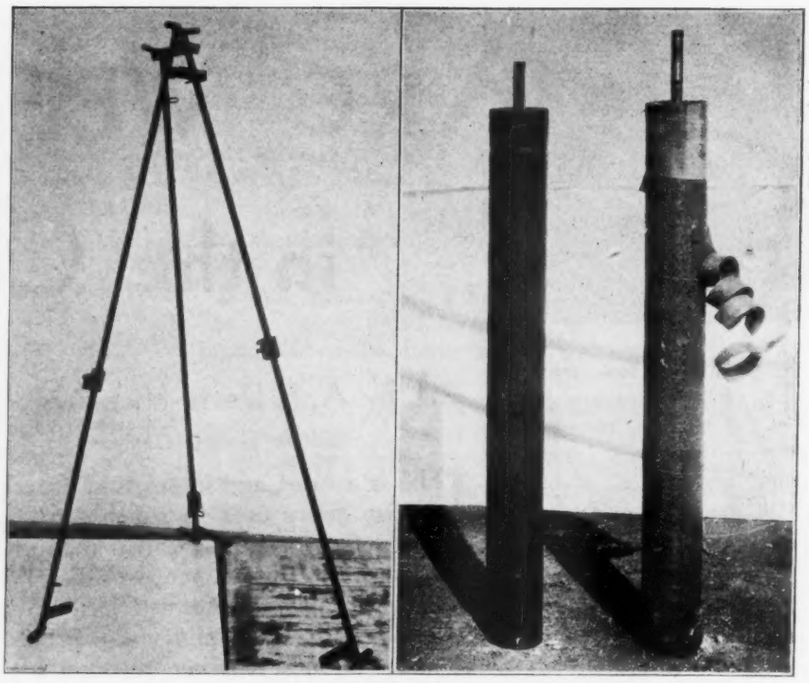
Welding shafts for rotor in loom motor.

Welding rods in picker lap pins.

Money Saved in the Shop.

While a welding equipment is indispensable where maintenance costs are to be kept down, it soon becomes the favorite tool of the tool maker. The variety of small equipment which can be manufactured with it depends only upon the ingenuity of the tool designer. Fig. 4 shows three protection rods for looms. These are made in one factory at the rate of 100 a month.

Fig. 5 shows two sand rolls for looms. Cold rolled tubing 4½ x 43 inches was ordered and the cast steel heads fused into place with the arc. Any number of simple machine parts can be manufactured with arc welding equipment without drawings or anything other than standard steel shapes.



Left, Fig. 4, protection rods for looms built by arc welding. Right, Fig. 5, sand rolls fabricated at the mill with arc welding. Both cost-savers . .

Arc welding features the wood and steel wagon which carries the watt meter and transformers shown in Fig. 6. This wagon is stronger and more rigid than a riveted or bolted product. Another example of the same type of work is shown in Fig. 7, a steel crate for a motor. Bolts are used only where mobility of parts is desired . Figs. 6 and 7 illustrate the simplicity of arc welded construction. Steel bar stock or angle irons need only be cut to length and assembled like lumber. This is further exemplified by Fig. 8 which shows a rack for storing pipe. This stock

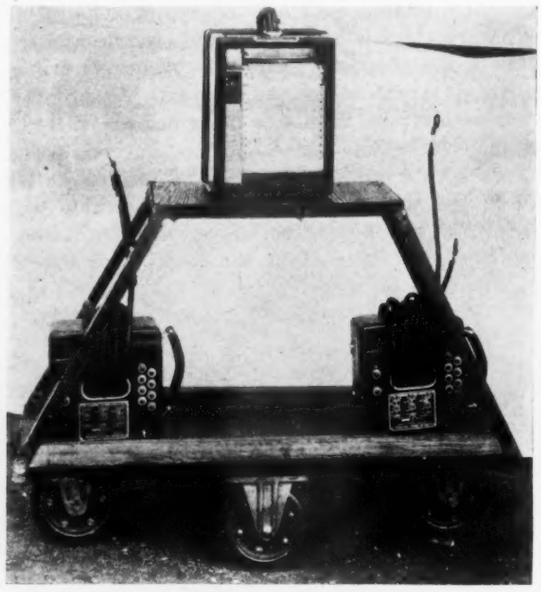


Fig. 6. Electrical equipment is moved about in this arc welded carriage . . . . . .

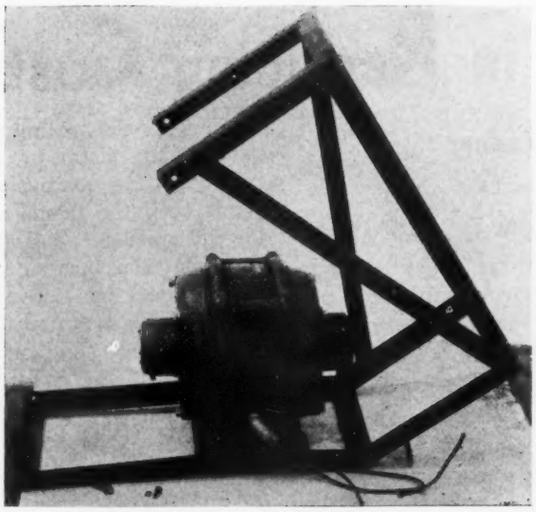


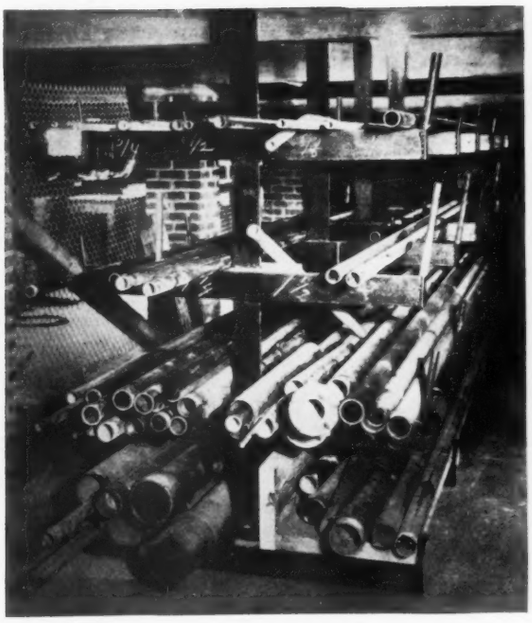
Fig. 7. This motor crate was fabricated in an hour from flat stock, by arc welding . . .

room furniture is constructed of 5/8 x 4 inch flat steel with short pipe lengths welded to the shelves to keep the material from rolling off. This application also suggests the construction of other storage equipment including steel cabinets and shelving of all types. Steel furniture, stools, tables and benches can be easily fabricated from plate and angle stock with arc welding equipment.

It is the simplicity of such construction that is causing it to spread. Without welding it is impossible to join metals at an angle without the addition of a third and fourth member, usually an angle and a bolt; bolted construction requires careful laying out and punching, but with welding the pieces need only be held in their proper alignment for an instant and drilling is eliminated in favor of fusion fabrication which results in permanent one-piece construction.

Besides the applications shown there are literally thousands of other possibilities. One company built its own coal cars for its boiler plant, arc welded fittings and take-offs in its steam and water piping system. Air conditioning and ventilating ducts may be constructed by arc welding sheet metal of the proper size.

Bases for special equipment and all manner of seamless tanks and tubes are easily constructed with a welder.



durable and inexpensive . . . . . .
Fig. 8. Arc welded steel shop equipment is

An arc welding outfit consists of a current supply unit (either a motor-generator set or a belt driven generator) with a stabilizer to maintain a constant current. The variable voltage type allows the operator dual control of the welding heat. The accessories consist of a shield for the operator's eyes and face, flexible cable, an electrode holder and electrodes for various types of work. The whole outfit should occupy no more than nine square feet of floor space.

While anyone capable of learning to drive an automobile can learn to use a welder, it is advisable that the operator have at least two years' experience in some general welding shop, and the background of a course in some accredited welding school. The large manufacturers of welding equipment maintain schools for both new and experienced operators.

As pioneers in the field of arc welding the writer's company has discovered that welding equipment, purchased for maintenance work, almost invariably ends in production. As the foremen, superintendents and engineers grow familiar with the possibilities of the process the use of the equipment increases.

For Drying Wet Cotton.

DELAYS and fire hazards incident to the drying of wet cotton have been removed at the public cotton warehouse at New Orleans through the installation of a cotton dryer, the first to be built in a Gulf port, and the second in the country.

During the past few months hundreds of bales of wet cotton were received and had to be unbaled and spread out to dry. Because of unfavorable weather conditions it was necessary to dry the cotton inside the sheds, constituting not only a fire hazard but also a slow method of drying the cotton.

The New Orleans dryer is a box-like structure. It is more than 100 feet long and is built in three sections. Two end sections are each 64 feet long and one-story high. Between them is a two-story section with coils of high pressure steam pipes lining it and maintaining a temperature of 200 degrees. Tightly closed doors at each end keep the heated air from escaping. The cotton bales, with only two bands loosened, are piled on trailers and hauled into the dryer with a tractor. In two hours the tractor is hauled out the other end and the cotton is dry.

The new dryer has a capacity of 480 bales every 24 hours, according to E. H. Lockenberg, superintendent of the warehouse. It was built at the direction of the board of port commissioners, and includes some features of a similar dryer at Memphis.

Motors as a Factor in Reducing Cost

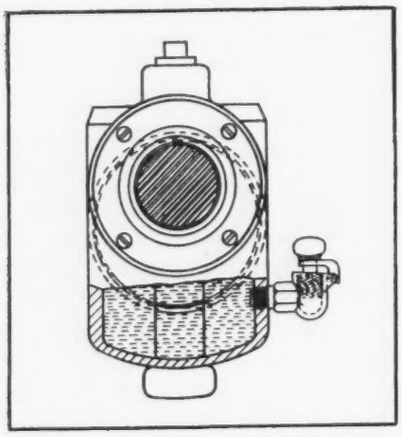
By H. W. Reding

Westinghouse Elec. & Mfg. Co.

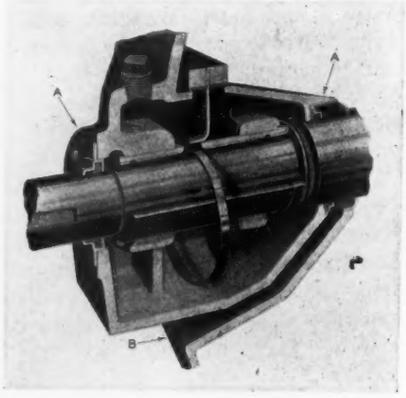
THE electrical equipment of a mill offers an important possibility of effecting economies, when the proper methods of maintenance, inspection, etc., are used. In this article, Mr. Reding defines the construction and functions of a motor in textile operation, and describes some recently developed means of providing economy and efficiency in this important phase of power transmission in the mill . . . . . .

THE KEYNOTE in manufacturing at the present time is reduction of cost. The textile industries while devoting thought and effort to the correction of certain fundamental economic difficulties are also putting their manufacturing costs in order. The future may hold many uncertainties but one thing at least appears certain, strict competitive conditions will exist for a long time and profit and success will go to the mill with the low cost.

As one would expect, the manufacturers of machinery and equipment used by textile manufacturers have not been idle. Every effort has been expended to devise new equipment which will result in lower manufacturing costs for those who use it. Motors being one of the important items of textile mill equipment it is natural that the motor manufacturer should contribute his part in the development of more reliable motors which demand less maintenance. The object of this discussion, therefore, is to point out certain possibilities of cost reduction in connection with the operation and maintenance of the motor equipment.



Left, end cross-section of a sealed sleeve bearing, showing special oil filler plug. The cut-away at right shows, at A, the shaft seals, and at B the air bypass which neutralizes unbalanced pressure . .



To provide a background for the cost reduction analysis, a rather elementary consideration of what a motor is and how it functions is necessary. The average textile motor consists essentially of a rotor mounted on a shaft, a stator core carrying a winding consisting of insulated wire coils, which must be properly supported and held in place by some form of frame structure. The addition of bearing brackets to support the rotor completes the listing of the essential elements. When current is applied, the rotor revolves with a very small clearance between the rotor and the inside of the stator core. It is of course essential that the rotor remain concentric with the bore of the stator.

The duty of holding the parts of the motor in correct operating position depends upon the frame and the end brackets. A strong rigid material such as cast iron is ideal for this purpose. There must be this strength and rigidity of the frame if the motor is to operate over a long period of time with a low cost of maintenance.

The rotor is an element which should give no trouble. Whether or not it does, depends upon the care and skill with which it is manufactured. A rotor consists of a body of iron carrying a winding and this frequently is manufactured by the aluminum die casting process. The fact however that a motor has a die cast rotor winding is no insurance in itself. The bars which are entirely hidden in the rotor iron, and the end rings must be perfectly formed throughout, without cracks or casting strains.

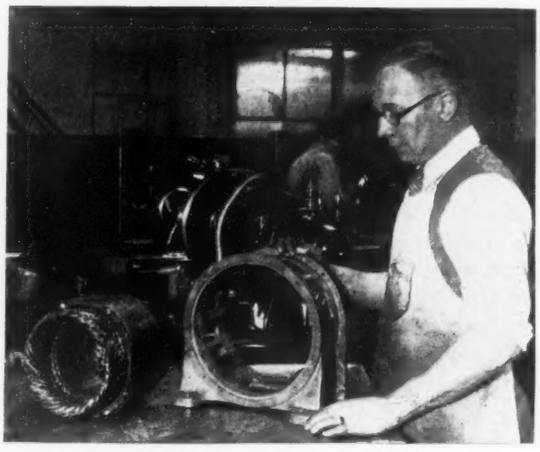
A process which has been highly successful forms this winding by forcing the molten metal under high pressure from one end of the rotor only. This means that the metal comprising one of the end rings has all been forced through the openings in the iron. Any defects which might exist would then come in the end ring and since this is exposed such defects are obvious. If the rings are complete and perfect, it follows that the bars are also that way.

Assuming a proper frame structure, an adequate shaft and a perfect rotor, the principal parts subject to maintenance are the stator windings and the bearings. To manufacture a stator winding and insulate it so that the motor will stand up for many years of hard service under conditions of lint, moisture and relatively high temperature requires the utmost skill and experience backed by extensive research facilities.

These conditions can best be met by the carefully

wrapping of each end of each coil with cotton tape, with additional insulation between the coils of adjacent phases. These layers of cotton form a mechanical separation between coils and phases which is positive and which must remain so. After this insulation has been properly treated with suitable varnishes it becomes highly resistant to moisture, oil and dust and remains flexible.

Although the windings may contain insulating material of the highest quality they are still subject to damage by mechanical accident or injurious overload. The cost of replacing and repairing such motors although small, is an inevitable part of maintenance and operating cost. Any improvement which makes it possible to accomplish these repairs quickly and at low cost helps to maintain production and hold down the maintenance cost.



The primary core is separable from the motor frame, permitting quick replacement of a damaged winding . . . . . .

Having this point in mind the replaceable stator core design was developed by the Westinghouse Company. With motors of this type, the damaged core and winding may very readily be pressed out of the frame and replaced with a new factory wound core. On motors such as are commonly found in textile plants, and assuming facilities ordinarily found in a mill shop, this replacement may be made in an hour or two and the motor again put into service.

The principal expense incident to the operation of motors comes about due to the cost of cleaning the motors and of maintaining the bearings. Bearing design has much to do with both of these costs. Obviously a motor which is oily on the outside or inside will collect lint and dirt much more rapidly than a motor which is dry and clean. Experience has also indicated that one of the principal causes of stator winding failure is the continued presence of oil on the winding. So the ability of the bearing housing to retain its lubricant materially affects the life of the motor winding. With clean, dry windings and the large unobstructed air passages, the high velocity of the ventilating air tends to carry lint through the motor so that it does not accumulate inside.

The function of a bearing housing is to keep the lubricant on the inside and the dirt on the outside. If this is done the oil will remain in good condition and will require infrequent replenishment. With a liquid lubricant, the bearing housing must be most carefully sealed at every opening to obtain this condition. There must also be no tendency to circulate air through the bearing housing since air circulation will tend to carry out the oil and carry in the dirt.

The photograph and cross-section herewith show the cross section of a modern sealed sleeve bearing. The shaft openings are sealed by a ring of resilient felt protected and retained in position by a special sheet metal retaining ring. Wear of the felt is prevented by the fact that it is kept moistened with oil from the bearing. The projecting lip provides an enclosed air space adjacent to the felt which is effective in keeping dirt from reaching and damaging the felt ring and in excluding external air currents which tend to evaporate the oil carried by the felt. An air by-pass neutralizes unbalanced pressure in the bearing which might be caused by the ventilating air currents flowing over the bearing housing.

To complete the sealing of the housing the oil filler is in the form of a threaded plug. This prevents an accumulation of lint from wicking oil out of the bearing and effectively closes the housing at this point. The plug is held by a keeper so that it may not be lost or carried away.

With the oil so thoroughly retained in the bearing housing the cleaning problem of the motor will be greatly simplified. If the bearing is then lubricated only when additional lubricant is needed, it is certain that the cost of bearing maintenance will be reduced to an extremely small amount. In many mills, fresh oil is added only once or twice a year with bearings of this type.

From this discussion in connection with reducing the cost of motor maintenance, it is obvious that reduction is brought about by refinement of design and improvements in manufacture. A strong rigid frame, an indestructible rotor, a stator winding with each coil thoroughly insulated from each other coil and all of them thoroughly insulated from the frame, a stator core which may be quickly replaced in case of accident and last the use of bearings which keep the oid in and the dirt out, these constitute the essential elements of motors which are in keeping with the present day trends in the reduction of manufacturing cost.

Rayon Displays in Atlantic City.

Three rayon displays are now being featured in the Du Pon exhibit on the Boardwalk in Atlantic City. Practical sports cloths of Ribaire, a rough ribbed woven fabric. Another display is of shower curtains made of water-repellent rayon, manufactured by Para Manufacturing Company of Newark, N. J. Another interior display is devoted to undergarments of du Pont rayon. They are in white, black, peach and flesh, and are manufactured by Gluotex Manufacturing Corporation of New York City. The shower curtains are featured in a variety of color combinations, as is the case with the sports materials made of Ribaire.

CURRENT TOPICS

Talk of the Month.

AMONG the encouraging factors in the cotton industrial situation through a long period of preparation for better days has been the strength (negatively) of a lack of selling pressure from the South because of the burdensome supply of staple. For weeks, and months, the exchanges and goods market have been timorous, rather fearful of a broad selling movement in raw cotton which would undermine the market even at the low level which has obtained. Yet persistently the holding movement has continued. Predictions are not wise, but it may be pointed out as logical that, in the event of early growth of the goods demand and assurances of extensive acreage curtailment before the resistance of the South might be weakened, the bearishness of the supply burden will be mitigated.

The General Situation in Textile Markets.

Herein is a fundamental which perhaps has the utmost to do with the prospects of a profitable period ahead for the cotton industry. The wool industry has already, if strong signs are not mistaken, arrived at the point of stability in raw material and such a circumstance is heralded as the harbinger of a similar condition in the goods end. The silk industry early in the year gave evidence of a turning back from the upset caused by the abrogation of the gold standard in Japan, and the disorganization therefrom of yen exchange. The rayon price situation and outlook in January were more uncertain, and that part of the textile trade offers buyers a problem different from the one in old natural fibers, where statistical conditions are apparent and tell by themselves something about the prospects.

Meantime, it should soon be found that demand rules the roost rather than supply. When the depression was at its worst, the theory was propounded that under conditions of manufacturing stagnation, any volume of raw material, even a subnormal amount for active industry, will show a surplus and unsetteld values are the result. The converse of that theorem should be a stronger market on active goods buying. The uncertainties of the raw-material situation in 1931 produced an unsettlement in the goods market, but did not account for the absurd extremes to which competition carried prices, especially in print cloths. And so came about the astounding circumstances wherein buyers moved to effect stabilization in the goods manufacturing industry.

In other words, the mills had not only discounted all the bearishness of a weak cotton situation, but had gone measurably beyond that point, even to where they were discommoding their own buyers. Yet in spite of the ruinous competition, year-end reports indicated a lack of burdensome stocks of goods except in one or two branches. That meant as a rule a new beginning for the industry with raw cotton on a basis to promote wider consumer demand, and a promising outlook for those mills with low inventories and with wages adjusted to the new order of the day. The progress of general business and the rise of new confidence now are the two paramount issues for the welfare of the cotton and other industries.

In the very word depression is expressed a mental state, and certainly the economic situation has been in that category for a long time. In taking stock of things as they were at the end of the year, there was evident a real appraisal of the frame of mind as well as of material circumstances. A frame of mind cannot be expected to last forever, nor a period of sub-normal consumer buying, so we may look for less consideration of psychology and more attention to practical affairs as the year advances.

As an instance of how things are bound to work when the ball is started rolling, an experience of the White Motor Company early in the year is illuminating. This company received an order for 774 heavy-duty trucks for New York City. Immediately it turned around and placed orders for 13,500,000 pounds of materials to use in manufacturing the trucks. "The unusual size of the New York order makes it a striking example of how today's log jam of business can be dislodged," said A. G. Bean, president of the company. "Besides enabling the White Company to give full-time employment to its factory workers, the order contributes to the payrolls and purchases of 150 other employers. Their payrolls and purchases, in turn, affect hundreds of others."

Bright Spots!

The president of a rather large textile organization in the South made the statement, since January 1st, that it does not owe a dollar to anyone, has money in the bank, cotton in the warehouse, orders on its books and not three days' production in stock.

* * *

Textiles, Incorporated, with a chain of 21 combed yarn mills, state that their business for the first quarter is decidedly hopeful, with their production program expanding. They further state that they will not manufacture any yarn for which they do not have shipping instructions.

* * *

Recently there came information from another large plant that it had sent out twenty carloads of twine and 102,000 pounds of other textile goods; that it has increased its corps of traveling salesmen, and has on its books at this time unfilled orders for 2,300,000 pounds of textile goods.

* * *

A recent statement of a large towel mill to the effect that it had closed a $500,000 contract with one organization is also indicative of business awakenings.

* * *

Conditions in the print cloth and narrow sheetings groups seems to be clarifying under the influence of the leaders in these groups and the cooperation of the finishers and converters.

* * *

A large commission house states that their total sales in yardage in 1931 exceeded 1929 by one per cent.

Operating conditions in the cotton mills, aside from the matter of financial return, were favorable in 1931. The early January report of George A. Sloan, president of the Cotton-Textile Institute, cited two phases of soundness; a relatively high degree of employment, compared with that in other industries; and "perhaps of greater importance, a nearer approach to uniformity of running time than in the previous ten years." Merchandising was the disappointing element. But if the wide variety of experiments was not productive of apparent success, one might truly say that new ideas have not had a fair test under competition in which practically nothing succeeds in the economic field. The large mergers, the direct mill agencies, the restored jobbing houses and other groups will have a fairer chance to prove themselves this year.

Durene Plans for 1932

E. L. STARR, director of the Durene Association of America, supplied in an interview with COTTON early in the year an interesting description of the Association's aims, its methods and its accomplishments. The association is composed of producers of Durene yarns, and among the members are: Aberfoyle Mfg. Co., American Yarn & Processing Co., Dixie Mercerizing Co., Hampton Co., Clarence L. Myers, Inc., Spinners Processing Co., and Standard-Coosa-Thatcher Co.

When asked with what purposes and plans the Association starts 1932, Mr. Starr said:

"The Durene Association of America believes the successful promotion of durene cotton to be of far-reaching value to the cotton industry as a whole. Durene cotton stands today as representative of cotton's finest possibilities, and points the way to a steady increase in cotton as a fashion medium.

E. L. Starr.

"In order to make our services to our yarn makers as successful as the past year's work has proved it to be we have unswervingly followed the co-operative policy of serving the trade as a whole. This collateral service with manufacturers, wholesalers, jobbers and retailers has been responsible for the balanced, wide-reaching soundness of our work.

"A sales stimulus which stops short of its ultimate goal is but a ripple in the broad stream of modern commerce. The Durene Association recognized this at the outset of its work, and has seen to it, first, that no merchandising ripple is started unless we are positive of its advisability through close market research; and second, that it is not started until we are prepared to follow through with the many factors concerned in its successful promotion.

"This 'following through' entails, naturally, close work with knitters, weavers, underwear, hosiery and outerwear fabric makers. It entails, moreover, close association with cutters, wholesalers, jobbers, and lastly with the retailers and the consumers themselves. We never consider our job done with a new version of durene—a newly styled stocking, or a brand new dress fabric—until we have seen it successfully promoted in key retail stores of the country to consumers. As a result profits have accrued for the various factors concerned in merchandise whose inspiration, styling, merchandising and general promotion we have aided.

"Moreover, we have made and will make no effort to flood the market with durene fabrics or garments. Such a step would defeat our most fundamental plans. Ours is a proven successful movement to increase equitably the production and consumption of quality cotton.

"It will doubtless be interesting to know that through our outerwear fabric developments of the past months, 150 new durene materials have appeared. Each of these has been promoted in the manner I have just described.

"The successful pursuit of the program which we have followed makes us begin 1932 with the clear conviction that the forthcoming year's work must follow the same plan. We are constantly told that no other group in the textile fields is so fully realizing the present need for co-operative work; for sales stimulation all along the line of merchandising. Ours is being called—to our gratification—an 'advanced thinking', 'constructive', 'stabilizing' work.

"In 1932 we will thus continue to stimulate and diversify old uses in our yarns; while continuing our careful and continuous stimulation of 'new uses'. In them, of course, lie our most dramatic bows to the consuming public; but freshly styled, fearlessly merchandised staples such as hosiery and underwear have made a tremendous advance during the past year.

"The 'new uses' have importantly included durene laces, durene 'roughly' woven fabrics; soft durene nets and net-like meshes; lacy and other fancy durene meshes; embroideries; durene and wool mixtures in both knitted and woven versions; durene and lastex foundation garments and other prominent appearances of durene in this field; durene 'fur fabrics'; durene gloves—for sports, town and informal evening wear; and durene shoe fabrics, our newest achievement.

"The outlook for furthering our objective during the coming year is very bright indeed, and more than gratifying to the membership of the Association."

New England Mill Situation.

EARLY REPORTS of the year conveyed nothing new of particular import to the New England cotton industry as a whole, and the fine goods division of the national industry as behind print cloths, especially after the mid-January announcement of an agreement in the latter which bespoke a healthier situation for the year now on its second month. The talk late in January was that activity in fine goods was in prospect, but realization of the start of such a development remained for the future. However, if the demand outlook last month looked uncertain, there was much confidence that cotton mills need not face

the future in fear of continued unhealthy operating condition, in view of the changed inventory and other circumstances.

Forecasts of the first quarter of 1932 by the New England Shippers Advisory Board indicated that the immediate outlook was dubious. G. K. Earle and M. L. Hatch, chairman and vice-chairman of the cotton and cotton-products committee, stated the case for this branch in a way to show that the common attitude is to forecast nothing, but saw wood. They reported that "it is to be hoped that the new year will bring many unexpected improvements, but for the past two years the predictions have failed to materialize and every month the world's problems have been greater, so that once more all we can do is to wait and hope for the best."

In this state of affairs, mill men of New England have been minded chiefly to take stock of their condition, as a part of the general economic situation. The consensus of mill commentators may be taken perhaps from the remarks of the treasurer of the Nashua Manufacturing Co., Robert Amory, in connection with the annual report for the fiscal year ended October 31, 1931, in which he said in conclusion: "The values at which the inventory is carried and the present prices of raw material appear now to be at such a low point that it is reasonable to expect there will be no further large write-downs in inventories in the coming year."

As a general proposition, 1931 was a period of merchandising effort along new lines which involved mills in this district notably while it also embraced important southern units or groups. One may say offhand that the year was almost impossible as a profit-making period, for any form of merchandising. Yet at least one New England experiment, that of the Wamsutta Mills in linking up with the North Star Woolen Mill Company on percale sheets and pillowcases and later with the Wilson Brothers firm of Chicago on shirts, pajamas, etc., was cited at the year-end as an arrangement which should prove a valuable asset in the future. It has already had the sincere flattery of imitation.

Outstanding in the direct mill situation has been the decision of the Pacific Mills to remain in Lawrence and a kindred circumstance, which still hung in abeyance early this year, was whether the Pequot Mills would refrain from moving their Danvers bleachery out of Peabody. The five-week strike of mill workers in Lawrence, last fall, involving mostly worsted plants, but in the case of the Pacific a combination with a cotton department, led to serious alarm lest the disintegration of this center of textile manufacture be the result. There was much talk to the effect that the large operators there were planning to move away, where workers and town were more agreeable.

Giving substance to this threatened departure, the Pacific Mills were slow to resume operations after the strike and only in January was it announced that a gradual resumption of activities was being made. This program, however, was only inaugurated after assurance of a more reasonable attitude toward the corporation by workers and citizens. Just such an attitude and nothing else will preserve to Peabody the Pequot bleachery, because the matter was put up to the authorities in that community, with the information that many other communities were offering alluring inducements for the plant. It seems unlikely that Peabody will fail to get into line with a new spirit developing toward the industry in Massachusetts, especially as the city would have to go out itself and bid for new industry.

Legislative forces opened the year without showing any conciliatory mind toward textiles in Massachusetts. An attack on the industry was seen in the wording of a bill providing for the investigation of wage cuts, specifically stating the proposed investigating board "shall forthwith investigate into the business conditions of all textile manufacturing establishments having reduced or planning to reduce scales." Since the state long ago has legislated so severely as to drive much textile manufacturing away, however, it is hard to take seriously under current circumstances the proposal sponsored by Representative Roland D. Sawyer, a clergyman legislator, which would produce further discrimination against textiles.

Strength in Weakness.

DEPRESSIONS have their strong points as well as their weak ones. Careless enthusiasm and misguided ambition ran away with us in times of unusual prosperity, and cause errors and bad judgments to enter. Values get distorted, ideals get twisted and finally a crash causes the downfall of the good and the bad together.

The textile industry is, along with all others, digging itself out of the wreckage, trying to pick out the good and leave the bad, to find out why the bad was bad and what can be corrected.

While the textile industry of this country is not old, it is old enough to need renovation. Too many old mills, too much old machinery, too much ancestor worship, too much ignorance, too much resistance to change, too little appreciation of world changes, too much dependency upon others to do for the industry what the industry alone can do for itself, too much inefficiency, too many low-powered people who thought they were high-powered, too little vision or foresight, too much talk and not enough reason, too much waiting and not enough work, too much politics and not enough economics—and so the story goes.

Mills and machinery are being dismantled. New ideas of distribution and sales methods are being examined and tried. Intelligence is replacing ignorance. People are realizing that some changes are necessary to permit progress. World affairs are being studied. Independence of position, self-reliance guided by the principles of group co-operation, are fact. Efficiency is being installed into labor, management and machinery. Demands are being studied. And so on.

People are much safer than they realize. The depression is much nearer the end than some people anticipate. Destruction is not so great or disastrous

as some think. The fighting spirit is not lost. That is all that is necessary. The other things come.

A SOUTHERN mill man recently stated that he had been able so far to maintain practically the same wage rates as formerly. The reasons given for the condition were, first, he began to look more carefully into his manufacturing methods. He found that some of his machinery was obsolete, and this was discarded; some of the machinery available needed revamping and modernizing, and this was done. There was too much inefficiency and "slack" in the labor. The inefficient were eliminated and the more efficient were placed in position to render better service. Greater care was exercised in the manufacture and sale of the mill's product.

Wages.

Budgetary control of every department was studied and applied. In short, this mill man has been able to effect his economies and yet he was in a struggling way meeting the competition of his group.

Another mill man, in desperation during the same week, stated that he had done everything possible to meet competition, even to wage cuts that displeased him, and now competition and wage cuts by other members of his group were going to force him into another wage level.

Commodity price cutting is reaching out into the last frontier for its victim. It kills dividends, market confidence, competitive co-operation, public confidence, buying power, wage rates—and never adds a constructive idea to the industrial program.

The textile industry of the nation must be careful in its competition not to destroy the prestige it has enjoyed, of public approval in its industrial relations policy. The wages of the industry in the South must be safeguarded in reasonableness with the conditions in which other values are rated.

A RECENT report to the Interstate Commerce Commission by its attorney recommends the co-ordination of railroads and highway transportation to permit the use of each of these agencies in such a way as to give the public maximum service at minimum cost. Among the many conclusions recommended is that "Congress should declare that the business of operating motor vehicles for hire in interstate commerce on the public highways is affected with public interest and is so inter-related with transportation by other agencies that it must be considered a part of the national transportation system."

Federal Bus Control.

It is recommended that the regulation of the transportation of persons and property by motor vehicles for hire and for interstate transportation should be under the Interstate Commerce Act; that "interstate fares and charges of common carriers by motor vehicles should be just, reasonable, and not unduly discriminatory, unduly preferential, or unduly prejudicial." Requirements should be made that tariffs be filed and posted.

To the uninformed, bus transportation may seem larger than it really is. Authentic statements have been made recently to the effect that in the South buses are carrying only 3 per cent of the traffic, and statisticians have ventured the assertion that motor transports would never carry more than 14 per cent under most favorable conditions. If the recommendations of the attorney of the Commission should be adopted, one of the great competitive agencies of the railroads would be destroyed. The recommendations deserve the serious consideration of all manufacturers and transporters of persons or products.

BUSINESS has too long been negligent in the fields of government and politics. For this reason they have suffered impositions that otherwise could have been averted. In the National Congress at the present time far-reaching problems are being considered, some of which directly affect the textile industry, and some of which indirectly have a bearing. Inasmuch as this is a presidential year, politics is injecting itself in the approach to a solution of them.

Watching Washington.

A deficit of over two billion dollars requires that the Government shall have new revenues. This means an increase in taxes. A National sales tax has been suggested. A revision of the income tax has also been suggested with modifications in the upper bracket by one group, in the lower bracket by another group, and an extension in the lower bracket to lower incomes by still another group. Short term bond issues have also been suggested.

Regardless of how or when such levies are made, the people of the nation, either as a whole or groups must pay them. The problem of the business people of the nation is to see that they are levied in such a way as to do the least harm.

President Hoover has made certain recommendations for strengthening the credit structure of the nation, among which are the strengthening of the Federal Reserve Loan Bank System; the creation of a reconstruction finance corporation which has already been enacted; the creation of a system of home loan discount banks; increasing the discount facilities of the Federal Reserve banks; the development of a plan to assure early distribution to depositors in closed banks; revision of the laws relating to transportation; and the better safeguarding of bank depositors.

All of these measures enacted with wisdom and administered with justice can and will doubtless restore confidence to American business, which at the present time seems to be the one most important element needed. Parties and politicians must submerge their selfish attitudes and work in the nation's interests. Stability of prices, confidence in credits, belief in future markets, seem to be near at hand, provided the sacred responsibilities of a democratic government are observed.

The textile manufacturer's share in this is evident, because all industries are inter-related, all credits are kin, and confidence is contagious.

The applications of the financial policies set forth by Mr. Hoover are so evident in their effect

that no comment is required, provided they are enacted and administered for the welfare of the American people. It is the patriotic duty of every industrialist to interest himself in current activities in Washington, and to use his influence toward the end that this may be accomplished.

Price Instability.

THERE is a rather peculiar situation now obtaining in the textile industry. Deflation has progressed sufficiently not to be a serious problem. Most of the high-priced cotton has been disposed of, or marked down to reasonable levels. The dollar value, insofar as textile mills and textile products are concerned, seems to be fairly stable. Raw cotton is fairly stable.

Costs and overhead have been worked on until they are a very stable factor in the program. Commission and selling agencies are stable in their charges and services. In fact, nearly every factor in the textile problem seems to be fairly stable—except prices for manufactured commodities and the ratio of operating time to demand.

Prices and production are very closely related, and production seems to be the dominant member of the team. So much energy and effort have been put forth to control production, and now that this one factor seems to be the only disturbing element, it does seem reasonable to assume that production could be stabilized, and, with it, prices. If prices were unusually high, the situation would be different. But, when they are so unreasonably low, there is no confidence in them, and chaos exists because of the situation.

Comment on the Cotton Market

New Orleans, January 14th, 1932.

THERE was a change for the better in the cotton market during the past month, Middling cotton in New Orleans, compared with one month ago, showing an advance of about $3.00 per bale. Constructive developments were light offerings, a firm basis, comparatively good spot sales in the South, larger exports and spinners takings during the period than for corresponding time last season, and the more cheerful feeling of late in Wall Street.

While stocks of raw cotton in the South are comparatively large, there are numerous incentives for buying and providing for future requirements. Prices are very low and reported relatively cheaper than East Indian cotton, the crop is said to be of good quality and staple, chances favor consumption of American increasing, and there are prospects for a good reduction in the acreage in the spring, and perhaps a much smaller crop this year.

Wall Street appears to be in a more cheerful mood as result of Washington's constructive program which is favorable for general business, railroads and financial interests, and appears hopeful of success of efforts being made to extend German short time credits and adjusting satisfactory reparations payments.

In the cotton industry there is more activity of late in domestic cotton goods markets of the North, and there continues a good demand for raw cotton in the South, while the export movement and spinners takings are showing to better advantage, with the outlook apparently favorable for the future.

As to last year's foreign cotton crops, returns denote a smaller production than year before last in the leading producing countries except Russia. Russian, however, is mainly for home consumption. This feature of the situation, especially as to India, is to the advantage of the American product which is reported to be relatively cheaper than Indian, and may result in larger consumption of American at some expense to foreign growths.

LATEST AVAILABLE FIGURES AS TO LEADING FOREIGN COTTON CROPS, IN BALES OF 478 LBS. NET WEIGHT

Bales— Year—	1931	1930
India	3,428,000	4,033,000
Egypt	1,286,000	1,661,000
China	1,800,000	2,457,000
Brazil	600,000	493,000
Mexico	211,000	169,000
Chosen (Korea)	136,000	154,000
	7,461,000	8,967,000
Russia	2,000,000	1,550,000
Total, Inc. Russia	9,461,000	10,517,000

Because of this season's world's indicated supply of American lint cotton, which is about 25,628,000 bales versus 19,871,000 last season, it is fortunate for the South that the production of leading foreign cotton crops last year totaled so much smaller than year before last, which probably largely accounts for the large shipments of American to the Orient this season.

CENSUS COMPARATIVES

Bales—	This season	Last season
Ginned to December 13th	15,358,405	13 259,413
Ginned to December 1st	15,023,451	12,837,099
Ginned from December 1st to 13th	334,954	422,314

To January 8th of this season exports to Japan and China totaled more than for the whole of last season—about 1,734,000 bales versus 1,678,545, and present indications are that they will probably continue good. However, shipments to Great Britain, Germany and France are far short of exports to this time last season, but are likely to make a better showing during the remainder of the season.

EXPORTS FROM UNITED STATES, INCLUDING CANADA, FROM AUG. 1st TO JAN. 8th, IN ROUND FIGURES

To Bales—	This season	Last season
Great Britain	621,000	790,000
France	185,000	674,000
Germany	830,000	1,128,000
Japan and China	1,734,000	753,000
Other countries	936,000	847,000
Total to Jan. 8th	4,306,000	4,192,000

ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK STATISTICS, IN YARDS

	December 5 weeks 1931	November 4 weeks 1931	December 5 weeks 1930
Production	254,692,000	231,446,000	284,052,000
Sales	204,916,000	224,207,000	182,656,000
Shipments	237,834,000	213,889,000	226,951,000
Stocks	290,248,000	273,390,000	363,962,000
Unfilled orders	322,039,000	354,957,000	288,956,000
Dec. sales of production	80.4%	96.9%	78.0%
Dec. shipments of production	93.4%	92.4%	97.0%
Stocks at end of Dec.	Inc. 6.2%	Inc. 6.9%	Inc. 2.0%
Unfilled orders	Dec. 9.3%	Inc. 3.0%	Dec. 13.3%

CENSUS REPORT

United States—	This season	Last season
Consumption lint, December	415,517	405,518
Consumption, linters, December	44,491	43,522
Consumption, inc. linters, December	460,008	449,040
Consumption lint, 5 months	2,195,935	2,010,133
Consumption linters, 5 months	283,016	285,273
Consumption, inc. linters, 5 months	2,478,951	2,295,406
Mill stocks, December 31st	1,630,543	1,655,537
Stocks in public storage and warehouse, December 31st	10,425,945	8,375,943
Stocks in mills, public storage and warehouse, December 31st	12,056,488	10,031,480
Active spindles during December	24,637,864	25,549,782

BRITISH BOARD OF TRADE REPORT FOR DECEMBER

Year— 1931	1930	1929
Exports of yarns, pounds .. 15,000,000	12,000,000	14,000,000
Exports of cloth, yards 150,000,000	130,000,000	274,000,000

AMERICAN COTTON, SECRETARY HESTER'S FIGURES
Spinners Takings to January 8th

Bales—	This season	Last season
North and Canada	732,000	792,000
South	2,638,000	2,576,000
Foreign	3,894,000	2,927,000
World	7,264,000	6,295,000

MOVEMENT TO MARKET AND WORLD'S VISIBLE SUPPLY

Bales—	This season	Last season
In sight (marketed) to January 8th	11,450,275	11,589,280
World's visible supply, January 8th	9,161,331	8,382,081
Middling in New Orleans, January 14th	6.58	9.73

This Kind of Bolster Cost a Mill $4500.00 in Needless Expense in Less than Three Years.

It is a substandard, irregular bolster, not manufactured by us, and bought elsewhere without guarantee, at the same price which would have procured genuine Saco-Lowell Bolsters. These irregular bolsters caused the spindles to run hot, vibrate, throw oil, consume excessive power. They wore out at a tremendous rate. They represented three years of cumulative trouble for the mill.

All unnecessary expense for replacement parts may be avoided by using

Genuine Saco-Lowell Parts

They are more than so much cast iron or steel. They possess certain tangible and intangible advantages.

THE TANGIBLES:

1 — A design adopted only after its correctness in every detail has been demonstrated. You are thus saved the expense of trials and experiments, costly under any condition.

2 — Material selected as proper after thorough research and test in laboratory and mill. Slight differences in material may cause operating troubles difficult to locate and detect . . . but the expense goes on nevertheless.

3 — A product manufactured under close supervision by competent mechanics. The use of modern equipment assures complete interchangeability, a satisfactory cost, and long wear without costly interruptions.

THE INTANGIBLES:

1 — The full guarantee of the shops that your parts are suitable for the intended use.

2 — The services of the entire staff to make your machinery satisfactory in performance.

3 — The knowledge that your equipment is not suffering undue wear and hasty deterioration through the use of substandard and unsatisfactory parts.

Now, as never before, it will pay you to play safe, and to insure the integrity and operation of your machinery by using genuine Saco-Lowell parts. A large stock of finished parts is always on hand at Biddeford and Charlotte. In many cases shipments are made the same day that orders are received.

SACO-LOWELL SHOPS

147 MILK STREET, BOSTON, MASS.

CHARLOTTE, N. C.
SPARTANBURG, S. C.
ATLANTA, GA.

Compared with last year, the world's visible supply of other kinds January 8th was 1,826,000 bales versus 2,160,000, and of all kinds 10,987,331 against 10,542,081.

As to the present outlook for the next crop, there is much uncertainty as to what this year's acreage will be, for while it is generally conceded that there will be a reduction, the extent of the reduction is problematical at this time. However, it is hoped that there will be a drastic cut in the acreage next spring, as the world's carry-over of American next summer will probably be of very large proportions.

According to the National Fertilizer Association, fertilizer tag sales in the 13 southern states during December were 95 per cent of those for December, 1930, and 83 per cent of sales for December, 1929.

Lately Austin, Texas, advised: "Judge W. C. Davis has set January 20 as a date for hearing the test case of Fred L. Smith, Robertson County, Texas, cotton farmer, against whom the county attorney seeks an injunction to prevent his planting more cotton than the new Texas cotton acreage law permits. The case will be heard in the Franklin District Court."

As to the near future course of the market much will likely depend on developments in Wall Street which will probably reflect coming events in Washington and in Europe. Aside of the above uncertainties, conditions in the cotton market appear to be improving, if only slowly, with the outlook favorable as to the demand, exports and spinners takings in the near and perhaps distant future. Therefore, except for possible periodical recessions, the trend of values seems to be upward still unless the present situation in Washington and Europe becomes less favorable.

What the Southern Mills are Doing

OPERATIONS are well under way at the new bleaching, dyeing and finishing plant of Groves Thread Co., Inc., formerly the Groves Mills, Gastonia, N. C. The new plant contains 50,000 square feet of floor space and represents an expenditure of about $250,000.

Anchor Mills, Huntersville, N. C., is revamping its plant in order to convert part of its capacity into the production of high class hosiery yarn. This work consists of overhauling the card room, re-arranging all spinning frames, spoolers, and warpers, and shafting for these departments, and installing winders. Walker Engineering Co., Gastonia, N. C., is in charge of this work for the mill.

C. L. Upchurch & Sons, Athens, Ga., have purchased and will re-sell the equipment of the Star Thread Mills, Athens, Ga.

Overhead blowing equipment has been purchased from the Firth-Smith Company, Boston, by the Avondale Mills for installation in their various plants at Birmingham, Sylacauga, Alexander City, and Pell City, Ala.

Strowd-Holcombe Cotton Mills, Birmingham, Ala., have been re-organized and are now operating as the Selma Mfg. Co. J. F. Ames is owner and president, and H. H. Holcombe is superintendent.

Several frames of Whitin Casablancas long draft spinning are being installed at the Pell City (Ala.) plant of the Avondale Mills, Pell City, Ala., where a unit of Barber-Colman automatic spooling and high speed warping is also being placed.

It is understood that nine new printing machines will be installed in the Pacific Mills, Lyman, S. C., and that the equipment will not be removed from the company's plant in Lawrence, Mass., as originally announced.

The capacity of the Cetwick Silk Mills, Inc., Asheboro, N. C., is being increased practically 50 per cent. They are installing about 1,600 spindles of Stonington winders, 1,200 spindles of Model 5B doubler-twisters, and 700 spindles of Monarch twisters. This equipment is supplied by the Atwood Machine Co., Stonington, Conn.

The Delgrave Co., Newark, N. J., have established a southern plant at Spartanburg, S. C., in the building formerly occupied by the Star Hosiery Mill. The plant is under the management of Robert Stockman. The Delgrave company supplies plates used in cloth printing.

Winnsboro Mills, Winnsboro, S. C., has been re-organized as a South Carolina corporation. It was formerly incorporated in Massachusetts.

Four Abbott circulating winders, to be installed in connection with two units of high speed warping, were recently purchased by the Walton Cotton Mills, Monroe, Ga., from the Abbott Machine Co.

Cape Fear Mfg. Co. has taken over and is operating the Fayetteville (N. C.) plant of the Cape Fear Cotton Mills, Inc., of St. Paul, N. C. Spurgeon Kinslaw is president, and J. W. Butler secretary-treasurer.

Hightower Spinning Co., Maiden, N. C., has started operations in the plant formerly known as the Sherwood Mills.

Plans have been announced for making a separate corporation of the plant of Sayles Biltmore Bleacheries, Inc., Asheville, N. C., formerly operating as a part of the Sayles Finishing Plants, Inc., of Rhode Island.

It is reported that the Marion Mfg. Co., Marion, N. C., is to install 30 Model X Draper looms in a new addition, 75x100 feet, to its plant.

Report on Grade and Staple of Crop.

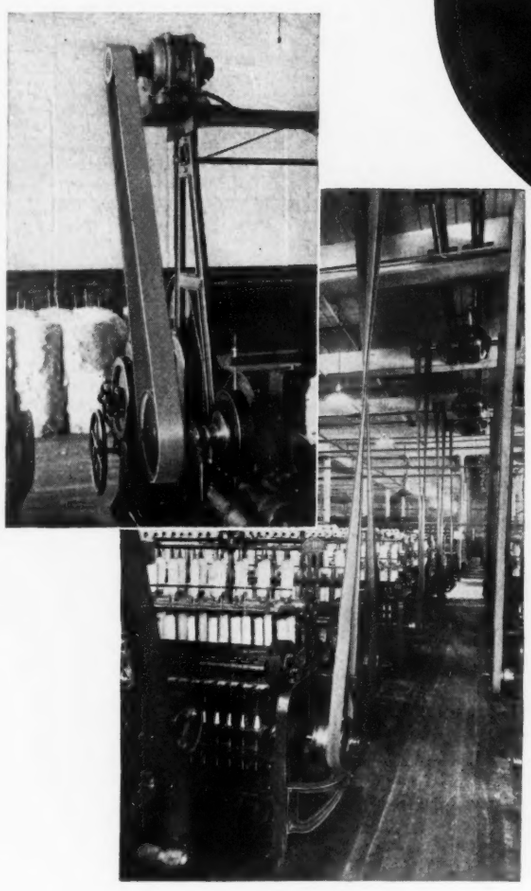
Cotton from the present crop ginned prior to December 1, 1931, was higher in grade and longer in staple than the ginnings for the corresponding period last year, according to the report of the Bureau of Agricultural Economics. Of about 15,016,800 bales of American upland cotton ginned prior to December 1, 92.0 per cent was estimated to be White in color, compared to 89.2 per cent ginned during the corresponding period last year; 78.5 per cent was White Middling and better, compared with 72.6 per cent last year; cotton other than White and Extra White was 5.7 per cent, compared with 8.0 per cent last year.

The estimates of staple length of upland cotton show. 5.6 per cent shorter than 7/8-inch, compared with 13.6 per cent ginned to the same date last year; 82.9 per cent, 7/8 to 1 1/32-inch, inclusive, compared with 76.2 per cent; and 11.5 per cent, 1 1/32-inch and over compared with 10.2 per cent a year ago.

From the standpoint of tenderability in settlement of contracts made subject to Section 5 of the United States cotton futures act, an analysis of the figures indicates a total of 14,016,700 bales, or 93.3 per cent tenderable, compared with 85.5 per cent tenderable in the case of cotton ginned prior to December 1 last year. Of tenderable cotton, 12,293,800 bales, or 81.8 per cent of total upland, ranged in staple from 7/8-inch to 1 1/32-inch, inclusive, and 1,722,900 bales were over 1 1/32-inch in staple. 1,000,100 bales, or 6.7 per cent, of upland cotton were untenderable, compared with 14.5 per cent of last year's crop ginned up to the same date. Of these 162,700 bales were untenderable on account of deficiency in grade only; 803,500 bales for deficiency in staple only; and 33,900 bales were doubly disqualified being untenderable in both grade and staple.

The total number of bales ginned prior to December 1, 1931, was reported by the Bureau of the Census on December 8 to be 15,023,646 bales, of which 15,016,820 bales were American upland and 6,826 bales were American Egyptian. The distribution of these totals by the Bureau of Agricultural Economics according to grades and staples is based upon the classification of samples taken during the stated period from representative gins throughout the cotton-growing states.

There is No Substitute for Experience



TUNE IN:
Goodyear invites you to hear John Philip Sousa and his Band . . . Arthur Pryor and his Band . . . Revellers Quartet and Goodyear Concert-Dance Orchestra . . . every Wednesday and Saturday night, over N. B. C. Red Network, WEAF and Associated Stations

SOMETHING much more valuable to you than even the best of rubber and the strongest of cotton cord is built into Goodyear Belts for textile drives.

It is the intimate knowledge which Goodyear has of textile mill requirements, gained from actual experience in Goodyear's own large fabric mills.

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For example, Goodyear COMPASS (Cord) Endless Belt is the most nearly stretchless belt made. It is truly endless, made of cords laid side by side, bound with Goodyear rubber, and enclosed in a fabric envelope that is double on the pulley side. The cord carries the tensions; the cover takes the wear. An exceptionally serviceable belt for individual motor drives in Vertical Openers, Pickers, Tappers and Twisters.

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Why not talk with the G. T. M. — Goodyear Technical Man—about the belt equipment he has specified for many mills, assisting their operations and saving them money? He will call promptly at your suggestion. Write to Goodyear, Akron, Ohio, or Los Angeles, California.

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1931 Statistics on Rayon.

Reprinted from Special Supplement of "Textile Organon", published by Tubize-Chatillon Corp.

THROUGH the co-operation and courtesy of producers representing 96 per cent of the American rayon industry, we are privileged to present their collective 1931 data in this special supplement to the *Textile Organon*. It is the first time in the history of the industry that so many producers have reported reliable figures for publication in one periodical.

The data shows that rayon production for the year 1931 reached a new high total of 143,900,000 pounds, an increase of 31 per cent over 1930. Of the 1931 production, 87.9 per cent was viscose rayon and 12.2 per cent was rayon made by other processes; the comparable figures for 1930 were 85.3 per cent and 14.7 per cent respectively. Rayon consumption likewise reached a new high peak of 150,100,000 pounds for the year, an increase of 43 per cent over the 1930 consumption.

Rayon stocks, at the end of 1931, were in a sound position, amounting to about a seven weeks' supply; this is essentially the same stock position in regard to sales as obtained at the end of 1929. The ratio of stocks to production in 1931 shows a decline of 35 per cent from that ratio in 1930.

The data on production and consumption since 1921 are shown in the accompanying chart and Table I. It will be noted especially that the trend of rayon production has been increasing steadily since 1921, with the single exception of the year 1930. This steady growth, in the face of the serious current depression, testifies to the sound position which rayon yarns have created and maintained for themselves in the textile field.

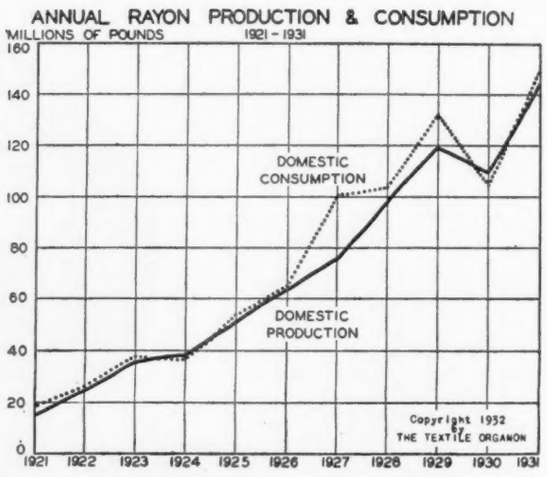


Table II shows the distribution of yarns by trades for 1931 and previous years.

This table shows that practically the entire increase in rayon consumption during 1931 was centered in the weaving field. This growth was not at the expense of the knitting business, however, but represents a pure increment. For whereas the knitting trades took approximately 65,500,000 pounds of yarn during 1930 (62 per cent of 105,300,000 pounds) the takings of this division in 1931 were 71,000,000 pounds (41 per cent of 150,100,000 pounds).

The year 1931 was one on which the producers may well look back with a feeling of accomplishment. Relations of the producers with one another were the best since the industry began in this country, and intense merchandising effort plus fairly priced yarn resulted in the largest volume year the industry ever had. There is every reason to believe that these same important requisites will obtain throughout the new year which has just begun.

TABLE I. ANNUAL RAYON PRODUCTION AND CONSUMPTION.
Units are thousands of pounds.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Foreign Trade			Est. Chg. in Dom. Stks.		
Year	Domestic Production	Imports	Exports	Net Bal. (No. 2 — No. 3)	Prev. Dec. to Current Dec.	Prod. Plus Import Bal. Col. 1 + Col. 4	Domestic Consumption Col. 6 — Col. 5
1921	15,000	3,276	Not	3,276		18,276	18,250
1922	24,400	2,116	re-	2,116	+ 500	26,516	26,000
1923	36,000	3,029	ported	3,029	+1,500	39,029	37,500
1924	38,500	1,712		1,712	+2,000	40,212	38,200
1925	51,902	7,001	148	6,853	+4,000	58,753	54,750
1926	63,600	10,063	400	9,663	+7,000	73,263	66,250
1927	75,556	16,236	401	15,835	—9,000	91,391	100,400
1928	97,900	12,734	196	12,638	+6,000	110,538	104,500
1929	119,500	15,950	223	15,727	+3,000	135,227	132,250
1930	110,000	5,649	345	5,304	+10,000	115,304	105,300
1931	143,900	1,525est	325est	1,200	—5,000	145,100	150,100

Production figures: 1928 and before, Daily News Record. Imports and exports: U. S. Department of Commerce. All other actual and estimated figures are by the Textile Organon.

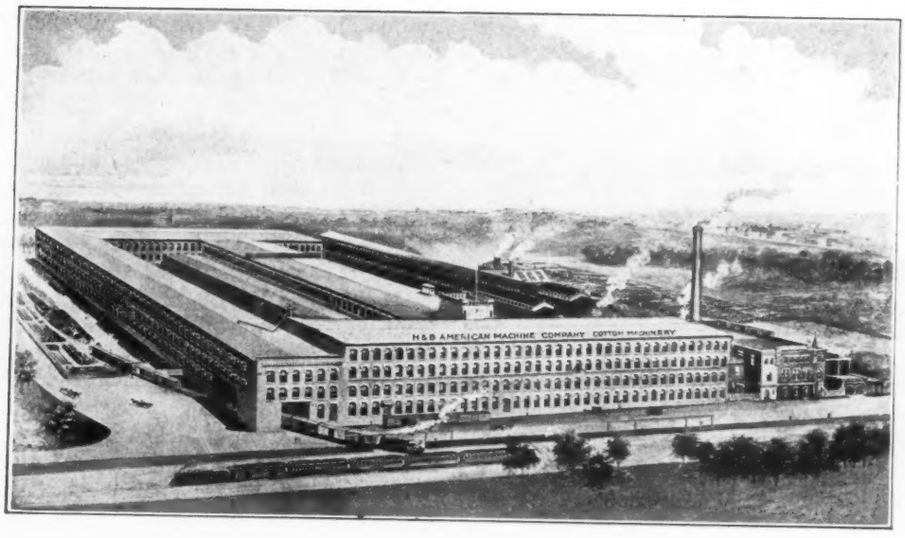
TABLE II. DISTRIBUTION BY TRADES.

In Per Cent.	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
Hosiery	23	24	22	23	28	25	21	18	19	17	14
Underwear	2	4	5	11	13	24	28	32	32	40	32
Other Knit Goods	29	26	25	14	5	3	4	4	4	5	1
Total Knit Goods	54	54	52	48	46	52	53	54	55	62	47
Cotton	9	10	11	15	26	21	24	21	21	18	27
Silk—Broad	12	12	15	18	16	14	14	14	13	9	15
—Narrow	*	*	*	*	*	*	*	*	*	*	2
Wool	1	1	1	1	1	1	1	1	1	1	-
Braids	10	11	10	8	4	1	2	5	5	5	1
Miscellaneous	14	13	11	10	7	11	6	5	5	5	8
Total	100	100	100	100	100	100	100	100	100	100	100

*Included in "Broad Silks" before 1931.

H & B AMERICAN MACHINE CO.

PAWTUCKET RHODE ISLAND



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MEDIUM AND HEAVY PATTERN TWISTERS

——ATLANTA OFFICE——

815 THE CITIZENS & SOUTHERN NAT'L B'K BL'D'G.

What About Rayon in 1932?

By C. M. Carr, Vice-President
American Enka Corporation

THERE has already been a great gain in the rayon industry. Sales are less seasonal, practically smoothing out production peaks and valleys. And not only is the yarn market much firmer and steadier; there have been constant technical improvements in production, securing better quality yarn and a greater degree of uniformity. Of course this standardization and grading-up of the product have helped the market situation.

There is a corresponding improvement in rayon fabrics; finer deniers and multifilaments are in continually greater demand. And there are more high style rayon fabrics and a far greater variety of such fabrics, partly because of the successful evolution of new types of dull rayon yarns.

Additional reasons for expecting better conditions in the merchandising of rayons are to be found in the excellent promotion to the trade that has backed up the better production methods. The trade has been told, forcefully and effectively, that rayon goods are dependable and profitable. Hand in hand with promotion there has been insistence on better styling. All this has had an excellent effect—direct and indirect—on the buying public. Consumer confidence in rayon fabrics, however, and knitted wear has been built up and is still being improved.

The 1932 mill production will probably be readily consumed. And this should be a good year for the rayon industry—especially as there is sure to be continued intelligence and effort applied to the fundamental problems of production, styling, merchandising, distribution and promotion.

American Cotton Manufacturers to Meet in Atlanta, in April

THE annual meeting of the American Cotton Manufacturers Association is to be held in Atlanta during the third or fourth week of April, it was decided at a recent meeting of the Board of Government in Charlotte, N. C.

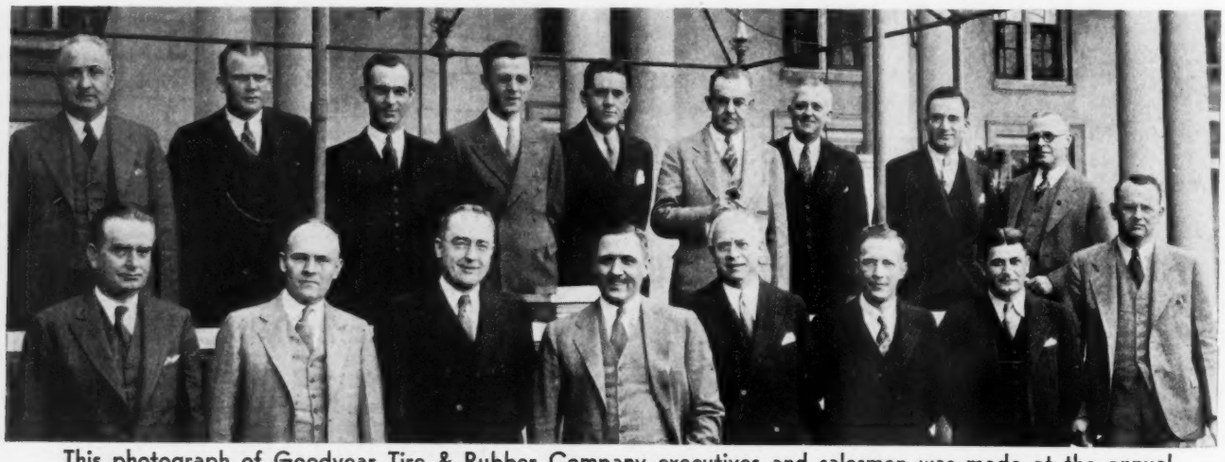
Cason J. Callaway, president of the Association, presided at the meeting, which was held at the Charlotte Country Club, with practically all members of the board present.

It was voted to appoint a committee to work with the several textile colleges in the South in order to outline improved courses for the students and to seek the installation of the most modern textile laboratory equipment. This action was taken at the request of the textile faculties of N. C. State College, Georgia Tech, and Clemson College.

Another matter considered at the meeting was to have the cotton committee of the Association take steps to see that motor trucks which carry cotton provide proper covering for the bales so that damage in transport can be eliminated.

Members of the Board present, in addition to President Callaway, were: B. B. Gossett, Charlotte; W. E. Beattie, Greenville; John A. Law and J. C. Evins, Spartanburg; C. E. Hutchison, Mount Holly; A. M. Dixon and A. K. Winget, Gastonia; F. J. Haywood, Kannapolis; A. M. Fairley, Laurinburg; George M. Wright, Great Falls; Allan Little, Alabama City; S. W. Cramer, Charlotte; T. H. Webb, Concord, and Robert Lassiter, Charlotte, and W. M. McLaurine, secretary-treasurer.

The Atlanta meeting will probably have the Atlanta Biltmore Hotel as headquarters. Definite dates will be announced later.



This photograph of Goodyear Tire & Rubber Company executives and salesmen was made at the annual sales conference of the southern division (mechanical goods) of the company, held in Atlanta, Ga., on January 25th and 26th. Sales representatives were present from the Richmond, Charlotte, Atlanta, Jacksonville, New Orleans, Shreveport, Birmingham, Memphis, Louisville, and Knoxville branches, and several executives from Akron, Ohio, including President Paul W. Litchfield (not in picture) also attended.
Front row, left to right: W. C. Winings, manager, mechanical goods dept., Akron; W. T. Bell, manager, hose dept., Akron; J. F. Stephens, manager, belt dept., Akron; R. S. Wilson, vice-president and gen. sales mgr., Akron; G. A. Waddle, asst. gen. sales mgr., Akron; W. H. Fleming, supt. production, Akron; B. S. Parker, Jr., and Paul Stevens.
Back row, left to right: W. C. Killick, E. M. Champion, Jr., T. F. Stringer, E. W. Sanders, J. B. Tilley, P. B. Eckels, A. R. Zierach, J. C. Pye, and C. P. Parker, manager, sou. div., Akron.

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TELETYPEWRITER exchanges, similar to telephone exchanges, now make it possible for any subscriber to this service to typewrite by wire instantly to any other subscriber, whether he be around the corner or across the continent. Subscribers can type back and forth by wire for short or long periods, just as they now talk by telephone.

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New Textile Equipment and Publications

New Festoon Type Machine for Shrinking.

The Philadelphia Drying Machinery Co., Philadelphia, Pa., have placed on the market a "Hurricane" automatic festooning machine for shrinking those materials which can best be handled without tension. It is explained that many materials, including woolens, worsteds, cottons, silks, rayons and special fabrics, such as palm beach cloth, canvas, hair cloth, etc., can best be shrunk without tension in a machine of the festoon type.

Upon entering the "Hurricane" machine, the material is automatically festooned over the poles of a slowly moving conveyor, which carries the cloth the length of the frame, where it is either delivered to another machine in range, automatically folded or rolled on a batcher.

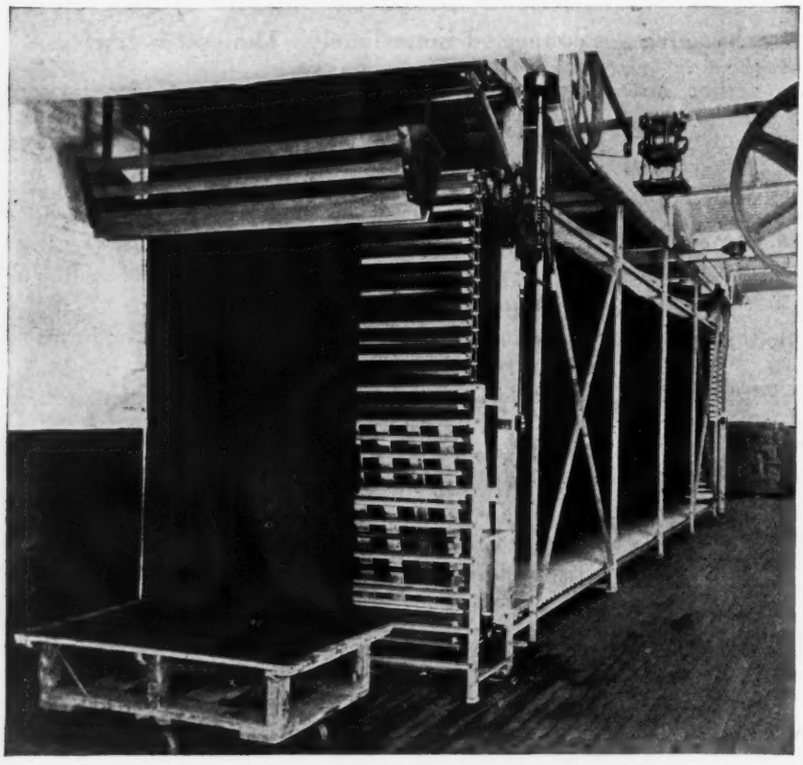
The feeding and looping device is so constructed that the material can be fed steadily in a flat, open condition, without the formation of wrinkles or marks, it is explained. To further insure that the material will be delivered smooth, straight and wrinkle-free, the conveyor is usually equipped with revolving poles, so that no one portion of the material remains in contact with the poles during the trip through the machine. The use of revolving poles also makes certain that the material dries and shrinks uniformly, the company points out, the position of any portion of the material with respect to the festoons being gradually changed as the festoons travel forward.

Slow, natural drying, without heat or air circulation, is attained in this machine, it is explained. However, for certain fabrics, it is desirable to dry the material more rapidly, and with the aid of heated air, and when such is the case the machine is housed with insulated panels, equipped with steam coils for heating and with fans to provide air circulation.

Equipment is also provided for steaming and wetting the goods before they enter the festooning machine; steaming being particularly desirable for softening hard finished woolens and worsteds. After passing over the steam chamber and through the wetting out tank, the goods are generally delivered to a vacuum extractor, which removes the excess moisture and tends to make the goods more lofty. The vacuum extractor delivers either directly to the festooning machine or to a scray in front of it.

At the delivery end of the festooning machine it is often desirable to pass the goods over hot cans for removing the final 10 to 15 per cent of moisture and for improving the finish, and insuring that no wrinkles or creases remain, it is pointed out.

In addition to the points mentioned, it is also explained that re-handling is eliminated by continuous in-range operation when desired, and that shrinkage is secured in a short time.



Festoon Type of Shrinking Machine.

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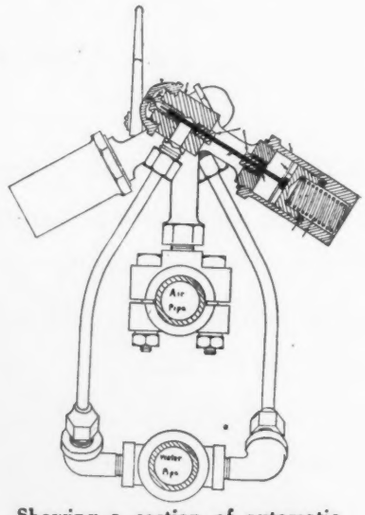
Automatic Self-Cleaning Humidifier Head.

A new humidifier head was recently introduced by the R. I. Humidifier Co., 315 East Worthington Ave., Charlotte, N. C., which, it is explained, embodies in its construction the feature of automatically cleaning itself whenever the humidity regulators function. According to the manufacturers, this is accomplished by means of a small cleaning pin which is forced away from the operating orifice when the humidifier head is in operation. When the air supply operating the head is shut off, the pin is automatically thrust through the operating orifice, thus effecting a thorough cleaning so frequently that stoppage cannot occur, the manufacturers point out. The humidifier head operates by means of compressed air and gravity water supply; and, it is pointed out by the manufacturers, is capable of maintaining full efficiency for an indefinite time.



Showing a section of automatic selfcleaning humidifier head . .

THE BEDAUX PRINCIPLE DEALS WITH THE HUMAN ELEMENT ALONE

HAVE YOU RECEIVED YOUR COPY OF "BEDAUX MEASURES LABOR"?

Every textile mill management should have a copy of this valuable book. It is a scientific treatise on a principle that took years of research and experimentation to perfect. It is a book that gives the technical information on a principle that profitably improves the relations between employer and employee.

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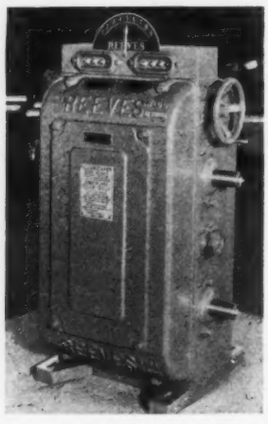
THE BEDAUX PRINCIPLE DEALS WITH THE HUMAN ELEMENT ALONE

Reeves Vertical Enclosed Design Transmission.

Reeves Pulley Co., Columbus, Ind., have announced the new vertical enclosed design, illustrated herewith, to complete the improved line of Reeves enclosed design variable speed transmissions. This new unit, incorporating the standard internal operating parts of the Reeves transmission, possesses all the utility of the horizontal enclosed design; but is better adapted for certain standard equipment installations, and for installations requiring less floor space for the speed-control unit.

A dust-proof, oil-tight cast iron case encloses all operating parts, providing



Vertical Type.

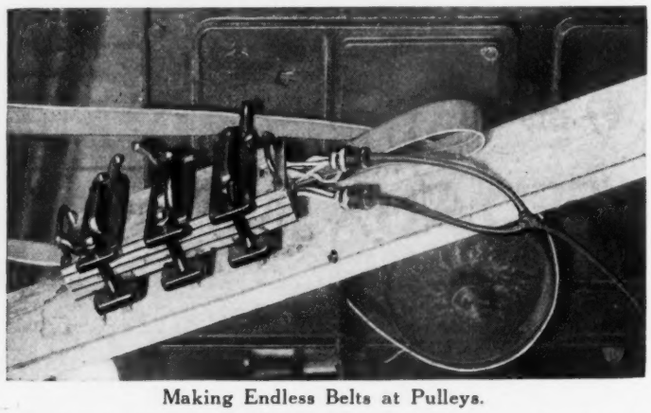
complete protection. This side cover may be easily removed by four cap screws and may also be removed for inspection and adjustment of operating parts. Complete lubrication is possible without removal of the cover section. All radial, shaft and thrust bearings are lubricated through force-feed fittings located in two convenient exterior panels. Shafts, driving keys and disc hubs are lubricated by means of force-feed fittings in each end of the shaft extensions. From the eight force-feed fittings the in panels, rigid copper tubes lead to the four radial shaft bearings, and flexible copper tubes elad to the four thrust bearings.

This vertical enclosed transmission may be equipped with electric remote, electric automatic and mechanical automatic controls, and with motors, motor bases and other accessories for varying requirements of speed-control.

The motor base is adjustable, vertically, in order that any stretch in chain or multiple V-belt drive may be taken up. The motor may also be adjusted for alignments on the rails of the motor base. For extreme reduction in speeds, an auxiliary countershaft may also be installed. This design is available in ten sizes, covering speed ratios of from 2:1 to 8:1 inclusive.

Endless Belts Made at Pulleys in 35 Minutes.

A new type splice, named the Condor Weld, enables endless belt users to make a regular stock piece of Condor belting permanently endless on the machine, while the belt hangs loosely at the pulleys, it is announced by The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J. With the Condor Weld, the two cut ends of a Condor belt are interlapped, set with rubber rivets, and welded in 35 minutes into a permanent homogeneous union, as smooth and as strong as the belt itself, it is explained.



Making Endless Belts at Pulleys.

Every step of the Condor-Weld operation is done while the belt hangs in place, requiring no removal of pulleys, no dismantling of the machine, or any partial shut-down on adjacent machines. The job may be done by a regular belt mechanic, it is pointed out.

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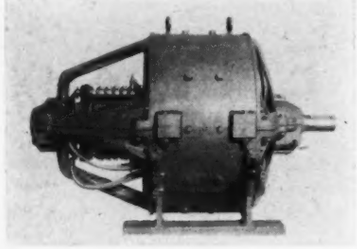
Reliance Adds Larger Motors to Direct-Current Series.

Larger motors for its Type T direct-current line have been announced by the Reliance Electric & Engineering Co., 1088 Ivanhoe Road, Cleveland, Ohio. The new motors range in size from 100-hp. at 800 r.p.m. to 350-hp. at 1,200 r.p.m. An unusual procedure,



followed in their design, is explained. Thirty-four engineers responsible for the care and operation of motors in some of the country's largest plants were shown the tentative plan, the manufacturers state, and they made recommendations for improvement which were incorporated in these new motors.

A rolled-steel split-frame construction is used. The feet and supporting members are of heavy bar steel securely welded to the frame. There are six main poles and six commutating poles. For the field coils metal bobbins are used. Brackets and sleeve bearings are of split design. There are two oil rings at the front end of the motor and three at the back to keep the bearings well lubricated. The brush-holders combine the advantages of the reaction-type with those of the box-type. The brushes are always kept at the proper tension, it is pointed out. Brush studs are made of steel, cadmium plated. Heavy fiber insulation is used for the studs. Hard drawn copper bars are used for the commutator. The construction of the commutator is such that the bars will not loosen upon expansion or contraction, it is explained. The leads are brought through both ends of the frame and held in place by wooden cleats. No terminal board is used. The motors may be supplied for constant speed or adjustable speed service with a range of 2 to 1 or 3 to 1.

:: :: ::

Inverted Bucket Type of Steam Trap or Condensate Drainer.

The Apex Regulator Co., division of the Fisher Governor Co., Marshalltown, Iowa, have announced a new bulletin, No. 1005X, covering the Apex Class St inverted bucket type of steam trap or condensate drainer. The trap is built in ⅜-, ½-, ¾-, and 1-inch pipe sizes, suitable for steam pressures up to a maximum of 125 pounds, and a total steam temperature of 450 degrees F. This trap is of the inverted bucket type, the company states, "permitting intermittent discharge, unusual capacity, and facilities for the elimination of air so that it will not air-bind." The announcement continues: "This trap will operate in a positive manner without dribbling. Both pipe connections are made in a horizontal plane and directly into the body so that the cover and working parts can be re-

SAVE 50%

on your degumming agent costs

without the risk of lowering the quality of your finished goods

NOW—by using these quality olive oil soaps in a single bath for "boil-off and dye"—you can save up to 50% of the cost of your "degumming and dyeing" agents.

Our experiments—and the actual use of these olive oil soaps in numerous plants—has proved these remarkable savings to be a fact. A careful investigation of the methods and materials used for degumming as well as a thorough study of the principles involved in "boiling off and dyeing" in a single bath made them possible.

A method of procedure has now been developed in which the use of our Texolive Kwiksolv or Arctic Olive Oil Soap will meet your exact needs. The incorporation of common dye-house chemicals with either of these soaps enables you to handle your degumming and dyeing problems at a considerable saving.

Give these quality olive oil soaps an opportunity to prove their merit in your own plant. Write today for prices and for a trial run. Be sure to return the coupon at the right for our bulletin which gives the complete details of degumming and dyeing in a single bath with these soaps. Take advantage of this opportunity to make these savings.

Bulletin FREE

COLGATE-PALMOLIVE-PEET COMPANY

Palmolive Building, Chicago, Illinois

New York Kansas City Milwaukee San Francisco Jeffersonville, Ind.

TEXOLIVE KWIKSOLV

(An Olive Oil Soap)

Texolive Kwiksolv is an olive oil soap in spongy form. This product is without a peer and is a most unique form of powdered olive oil soap. Its solubility and direct action will surprise you. (This contains 92% real soap.)

ARCTIC OLIVE OIL SOAP

(Bar, Bulk, Chip)

This item is produced from 100% olive oil foots to yield a mild, neutral soap. It rinses freely because of its low titre fat stock.

It can be used in any operation where neutral olive oil soap is required. Arctic Olive Oil Soap is especially valuable in processing silks, woolens, rayons and other fabrics of a similar nature.

TEXOLIVE

(Bar, Bulk, Chip or Granules)

This is identical to Arctic Olive Oil Soap, except that it contains a small percentage of coconut oil, the coconut oil being added to produce additional sudsing qualities . . . Also

Arctic Crystal Flakes and Granulated

Pure tallow soap, 42°c. titre.

T-22

COLGATE-PALMOLIVE-PEET COMPANY,
Palmolive Bldg., 919 N. Michigan Ave., Chicago.

Gentlemen: Please send me copy of your free bulletin which gives complete details of degumming and dyeing in a single bath with your soaps.

Individual .....
(Please print name)

Company .....

Address .....

City ..... *State* .....

moved without disturbing the piping connections. No complicated cover gaskets are necessary on account of this construction. After removing the cover, it is necessary to loosen only one screw in order to remove the valve, lever, bucket, and all other working parts."

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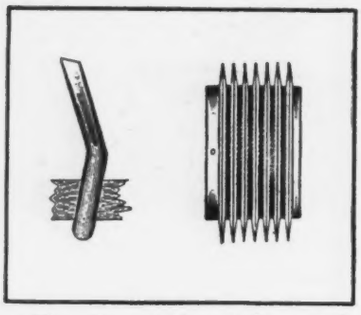
A New Departure in Card Grinding.

Dronsfield Brothers, Ltd., Atlas Works, King Street, Oldham, England, announce that after some years of study and experiment, they have completed a new type of card-grinder, supplementary to the regular existing surface grinders used on the cylinders and doffers of cotton cards. The new equipment is called the patent portable Autofeed Needle-point Grinder, and was designed to re-grind the card clothing on



The disc grinder, right, grinds sides of teeth, left . . . . .

cylinders and doffers when it has lost its fine needle-points and has worn thick through wear and the routine surface-grinding. The manufacturers state that by this system of grinding on the same lines as the initial needle-pointing by the clothing makers, the card clothing is re-vitalized.

The grinding wheel consists of thin bevel-edge emery discs mounted on an iron boss with rubber washers between each disc. This type of grinding wheel is identical to that used for side or needle-pointing by the clothing manufacturers. The bevel-edged discs are $\frac{1}{16}$-inch into the wire when ready for grinding. The machine is started, and the discs, in addition to traversing across the card, automatically feed down until they attain the full depth of $\frac{1}{8}$-inch, from which point they gradually withdraw to the starting point. A graduated collar with an indicating finger shows at a glance the position of the discs and whether feeding or returning. A handle is provided for determining any desired depth of feed, and for returning the grinding disc quickly to the starting point. The automatic feeding action, it is explained, prevents the formation of ridges or "shoulders" and the gradual withdrawal of the discs produces a smooth surface on the sides of the wire teeth. While grinding, it is pointed out, a burnishing roller should be used continuously with the burnishing wire teeth pointing forward, for preventing the leaving of the card-wire rough and for keeping the wire dents in the card fillet in correct alignment. The cylinders and doffers should be thoroughly stripped free from all fibers before needle-pointing with this grinder, it is explained.

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Knitting Patent Issued.

Patent No. 1,841,249 was issued to Walter Larkin, assignor to the Fidelity Machine Company, on January 12, 1932, it is announced. This patent is the acknowledgement of the invention and development of the design and construction by the Fidelity Machine Company of a circular rib machine using a needle wrapping finger and known to the trade as Multi-design. The invention and development which occurred in 1925 and prior to that date and for which patent was applied for on April 6th, 1927, indicates that over four and a half years elapsed from the time of application to the actual time of issue.

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Literature on Leather Belting.

An attractive piece of literature on "Leather Belting Made from a Single Tannage—Specifically Tanned for a Specific Purpose", has been prepared and is being distributed by Charles A. Schieren Co., 30-38 Ferry St., New York City, tanners and makers of leather belting.

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Grasselli Booklet on Spray Products.

The Grasselli Chemical Co., Inc., Cleveland, Ohio, have issued an instructive booklet covering the use and application of their spray products. General suggestions for the use of various of their chemicals—arsenate of lead, calcium arsenate, Dutox, etc.—for the control of insects and diseases common to fruits, vegetables, flowers, etc., are given; a growers' guide gives useful information as to the diseases of a list of fruits, vegetables, etc., with instructions as to the material to use for their control, the method of preparing the chemicals, and the time for applying.

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New Publication Describes Gearmotors.

Gearmotors, consisting of speed reducers compactly combined with induction motors into general purpose unit drives, are the subject of a new publication, Leaflet 20536, issued by the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. Information on application and operation, details of construction, a listing of sizes and speeds, and dimensions are contained in this leaflet.

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Explosion Proof Starters Announced by Industrial Controller.

Explosion proof A C automatic starters manufactured by the industrial controller division of Square D Company, Detroit, Mich., have been approved by the Underwriters' Laboratory for use in Class 1, Group D hazardous locations, it is announced. The starters are of the oil immersed type and control across-the-line single and polyphase motors.

:: :: ::

New Book on Elementary Design and Fabric Structure.

"Elementary Textile Design and Fabric Structure" is the title of a new book published by Longmans, Green & Co., 55 Fifth Ave., New York City. The author is John Read, head of the Textile Department, Royal Technical College, Salford. The book deals with fundamental weaves requiring one warp and one filling, and the author explains that while there are complete designs given to cover each class, the bulk of the examples are incomplete in some respect, affording an opportunity to the reader for very necessary practice in squared paper designing. The first few chapters describe weaving and designing in a very elementary way, and succeeding sections cover twill satin, diamond and spot, figured twill, elongated twill weaves, etc.; as well as designing for unbalanced structures such as poplin and repp. A chapter is devoted to the effects controlled by yarn features; voiles, crepon, shadow stripes, etc.; typical cotton cloth structures; a list of 64 different types or qualities of cotton cloths.

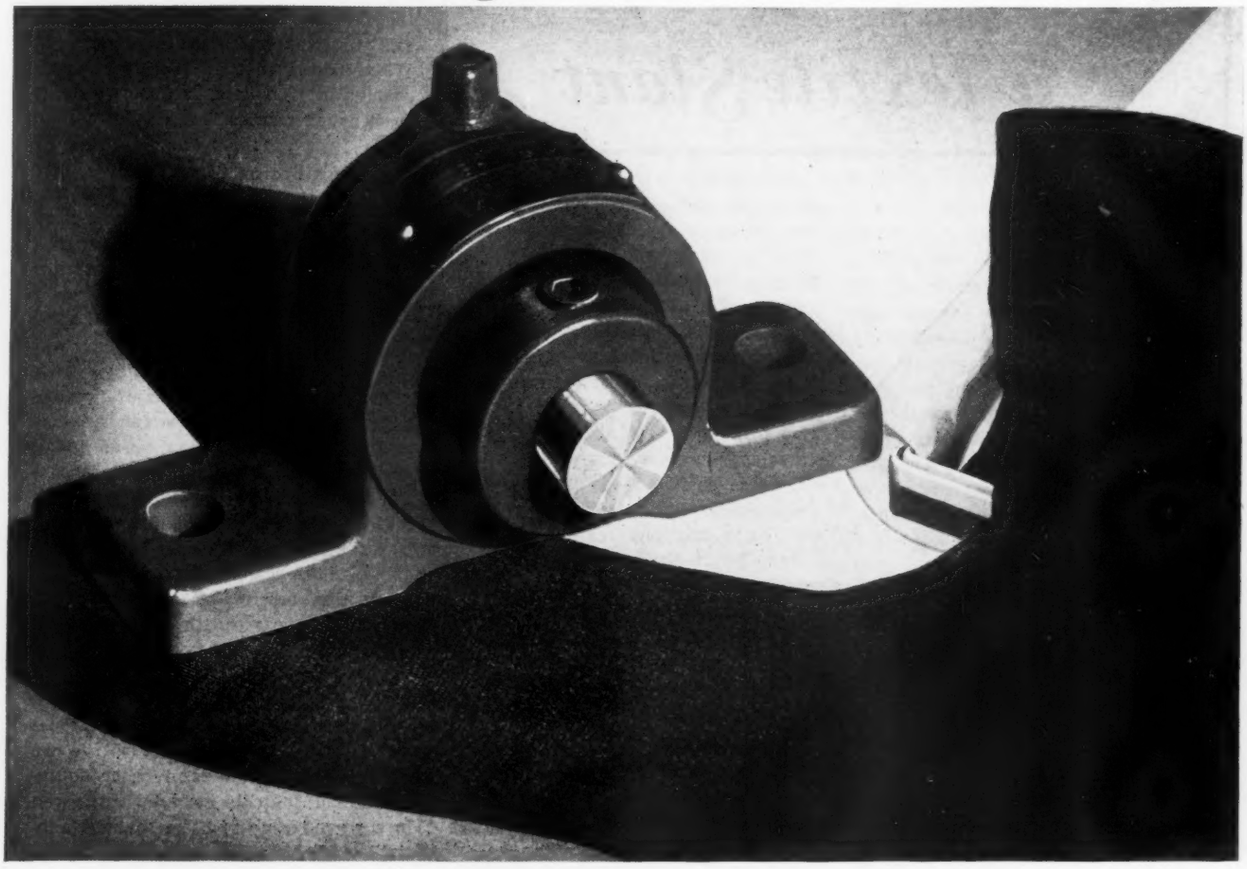
The price of the book is $2.00 per copy, and it may be secured direct from the publishers or through Cotton's book department.

:: :: ::

Book on Promal Castings.

Link-Belt Company, Indianapolis, Ind., have prepared an attractive book devoted to Promal castings. Promal, a metal originally developed for Link-Belt's own use in manufacturing conveying and power transmitting chains, is now available in casting form for the use of the designer and producer of machines, parts, etc., where the characteristics of Promal are an advantage. The new book, No. 1250, illustrates and describes Promal, shows its various applications for other purposes than chain, and gives a comprehensive description of its qualities and technical data concerning it.

Clean bearings... *Clean* stockings!



"NO LOSS caused by oil drippage on goods in process of manufacture" . . . Mr. D. E. Sellers of the Sellers Hosiery Mills, Burlington, N. C., rates this as one of the major economies effected by Fafnir Ball Bearing Pillow Blocks on looper tables—along with "considerable savings" in power and maintenance.

Fafnir Wide Inner Ring Ball Bearings always run clean . . . grease is sealed in leak-proof, dirt-proof housings, and needs renewing no more than once or twice a year. Fafnirs are cool-running, virtually free from friction. Deep races and large balls, fortified with tough alloy steel and hardened throughout, assure years of continuous service. And it's service without servicing—no adjustment is ever needed.

These benefits—together with an ease of mounting that equals the plain bearings—are influencing more and more mills to equip with Fafnir Transmission Equipment.

THE FAFNIR BEARING COMPANY, NEW BRITAIN, CONNECTICUT

Representatives also at Atlanta, Ga.; Charlotte, N. C.; Dallas, Texas; Houston, Texas; Boston, Mass.; Birmingham, Ala.

FAFNIR

FAFNIR
BALL BEARINGS

NEWS ITEMS *with a Textile Slant*

Report on Savings by Installing Modern Machines.

The economy of scrapping obsolete sewing room equipment is the subject of a recent engineering study of the performance of modern overseaming machines at the plant of The Nichols Manufacturing Co., Bridgeport, Conn., made by J. O. Peckham, an independent engineer. The Nichols Manufacturing Co. are makers of corsets, and rayon and cotton undergarments. The performance audit covers the operation of 11 Union Special overseaming machines Style 39100C, designed especially for seaming flat knit rayon garments with the three-thread Union overseaming stitch Type 504. An account of the investigation says in part:

"This plant produces a large variety of rayon and cotton garments and obviously the number and length of seams vary greatly with the particular style of garment. In general the operations are similar to those in the usual plant engaged in the manufacture of women's wear. The performance audit is a summary of the records of operations in the plant on the total hours of labor required per gross garment for each operation in the manufacturing process. An analysis of the detailed cost of plant operation was made directly from the Nichols Mfg. Co.'s own records.

"The cost record shows that the new high speed overseaming machines reduce the time required for overseaming operations from 1.12 to .8 hours per gross. On the basis of a nine-hour day production has been increased slightly over 40 per cent, and this increase in production is directly due to the installation of the Thirty-Nine-One overseaming machines replacing a number of older types.

"A net saving of 1.01 per day or $282.80 per year per machine is derived from the performance of the new equipment. This saving is made in spite of the fact that fixed charges are higher on the new equipment than on the old equipment. No depreciation nor interest is charged on the old style overseaming machines; full depreciation and average interest at 6 per cent were charged against the new overseamers. The net annual return on the investment produced by the saving is 131 per cent.

"In addition to the direct saving produced by the faster operation and greater economy of performance of these machines, the quality of work being performed is measurably improved.

"It should be pointed out in connection with the original savings in operating costs that most of the older equipment replaced is still in good working order. Definite study of the situation, however, presented conclusive evidence that these machines were obsolete and that more modern types would not only pay for themselves in a very short time, but would permit certain increases in the quality of work produced and would lower the net cost of garment production."

:: :: ::

A New Aluminum Paint.

Aluminum Industries, Inc., Cincinnati, Ohio, have issued material describing Permite. Resalum for inside and outside application on all kinds of surfaces—wood, metal, fabric, stone, etc. Greater covering area, light reflection, and resistance to heat, corrosion, and weather and elements are among the claims listed.

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General Oxidation Uses of Sodium Perborate.

The many uses of sodium perborate for general oxidation work are discussed in detail in a new 16-page booklet, "Properties and Uses of R & H Sodium Perborate", recently issued by The Roessler & Hasslacher Chemical Co., Inc., Niagara Falls, N. Y. The booklet contains information and data on the major industrial applications, physical and chemical properties, chemical reactions, methods and use and other features of sodium perborate. Sodium perborate, the booklet states, is very useful wherever it is desirable to have on hand an easily available oxidizing agent. "It has a number of interesting uses and applications in the textile industry. It is one of the most widely used oxidizing or 'fixing' agents for vat colors. These dyestuffs are first reduced to make them soluble and capable of impregnating the yarn, after which the color is oxidized back to the insoluble form by treating the dyed yarn with a dilute solution of sodium perborate. The perborate treatment assists materially in getting fine and bright colors. The bleaching effect of perborate is similar to that of hydrogen peroxide. It is often used to give a light scour to cotton previous to dyeing. Perborate is a useful addition and assistant to textile detergents. When added to soap it helps considerably in removing stubborn stains from soiled fabrics."

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Schieren's Boston Branch Moves.

Charles A. Schieren Co., 30-38 Ferry St. New York City, have announced the removal of their Boston branch from 727 Atlantic Avenue to a new location at 186 Lincoln Street.

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Booklet on S K F Roller Bearing Spindle.

A "graphical comparison of the efficiency of SKF roller bearing spindles and plain bearing spindles, as found in an American mill in 1931", is contained in a recent booklet issued by SKF Industries, Inc., 40 East 34th St., New York City. Graphic comparisons as to efficiency, power consumption, production, lubrication costs, quality of yarn and yarn strength, are given.

:: :: ::

Welded Monel Metal Found Suited for Handling Dyehouse Solution.

Results of a series of tests on Monel metal welds in connection with the use of welded dye tank and other equipment made of this material are given in a recent issue of "The Nickel Bulletin", official publication of the Bureau of Information on Nickel, London. Quoting a paper of F. Schuppel and W. Kastner in "Zeitschrift Dur Metallkunde", the Bulletin says:

"Tests on Monel metal welds made by the oxy-acetylene method, and by electrical processes (resistance welding, arc welding) show that the operation presents no complications if certain simple precautions are observed, and that the mechanical properties of the weld are equal to those of the original material. Butt welding experiments were unsuccessful, but it is considered that further systematic research may reveal the possibility of applying this method of jointing also.

"In view of the widespread use of Monel metal equipment in dyeing equipment, tests were made of the behavior of the welds in contact with a number of coloring solutions. In all cases the welded portions of the test pieces showed a degree of resistance equal to that of the unwelded material. The mechanical properties and corrosion-resistance of a large number of specimen welds are tabulated and critically reviewed, and the suitability of Monel metal for use in contact with various types of dyeing solution is summarized."

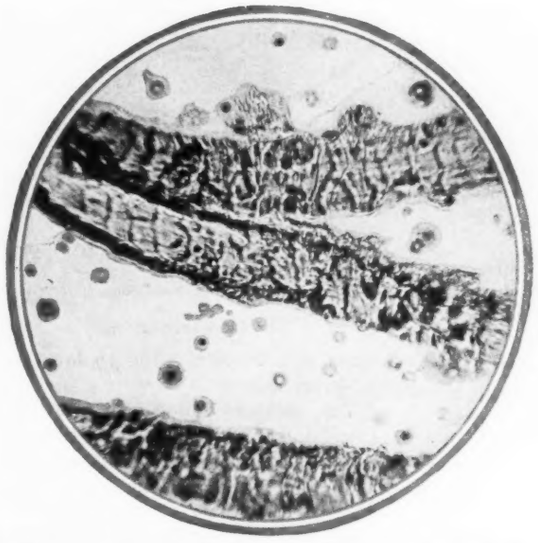
Using raw water

costs far more than processing it

NO rash statement is this. Many textile men have saved in a short time the cost of installing water-treating equipment because it has led to manufacturing economies and improvements in quality.

The economies are easily explained. In all scouring or boiling off processes, soap is used, and if calcium is in the water supply, usually about half of the soap is destroyed and wasted. Dyestuffs, too, are wasted by calcium, and economies of 25% have been made when the water supply was conditioned.

The way quality suffers is by deposition of calcium soap curds (that were produced by the reaction between soap and calcium) on the textile fibres that are being processed. Such deposits show in the photomicrograph.



Photomicrograph shows soap deposits. Permutit processed water eliminates them.

They cause high yarn breakage, and difficulty in dyeing and matching shades. They impair the "feel" of the finished fabric, and often make it harsh. All of which naturally results in lowered quality and decreased value. And the presence of color or turbidity in the water supply aggravates this condition.

However, if the water supply is processed, and turbidity, color and hardness are removed, these troubles are all eliminated and sufficient savings are soon made to repay the cost of Permutit equipment.

Wouldn't you like to know more about "Reducing Textile Costs and Troubles"? Just write for a free copy of our interesting booklet by that name. It's free, and it may start you on the road to greater profits. No obligations.

Permutit

THE PERMUTIT COMPANY
440 FOURTH AVENUE, NEW YORK, N. Y.

Manufacturers of Industrial and Household Zeolite Water Softeners, Hot and Cold Lime Soda, Lime-Barium Water Softeners—Sand Filters—Iron, Oil and Manganese Removing Filters—Continuous Boiler Blowoff Equipment—Ranarex CO_2 Indicators and Recorders—Other Power Plant and Water Treating Specialties.

Water Treating Equipment

TWENTY-THREE SALES OFFICES THROUGHOUT THE UNITED STATES

T-155

Earl Constantine to Manage Knitting Association.

EARL CONSTANTINE has been appointed managing director of the National Association of Hosiery and Underwear Manufacturers, filling the position which has been vacant since the resignation of John Nash McCullaugh last April to become general manager of the Berkshire Knitting Mills, Reading, Pa. Mr. Constantine is 46 years old, married, and a graduate of the University of Minnesota. He brings to his new position wide experience in association work and an extensive general business experience. Recently he has been with Ulen and Co., international engineers and financiers. Previously, he had been associated with the National Association of Manufacturers, National Industrial Council, Federated Industries of Washington, and other private and public service organizations.

Sulphonated Oil Manufacturers Form Trade Association.

At a meeting held in December in New York, representatives of twelve manufacturers completed the final organization details of the Sulphonated Oil Manufacturers Association, a new trade body, national in scope, which is composed of most of the leading manufacturers of sulphonated oils and their products. The following officers were elected for the first year: Charles P. Gulick, National Oil Products Co., president; Chester M. Braham, The Arkansas Company, Inc., vice-president; and H. B. Sweatt, secretary and treasurer. The offices of the association are at 55 West 42nd St., New York City.

The association was formed for the purpose of improving conditions both within the industry and between producers and consumers. A code of business practices will be adopted with the idea of promoting ethical methods of manufacturing and merchandising; to promote open and fair competition; and to discourage misrepresentations as to uses and qualities of sulphonated oils. Industry statistics relative to production, sales, shipments and stocks on hand will be compiled and disseminated. Tariff and railroad rate matters also will be considered.

The association will work with the Bureau of Standards, American Association of Textile Chemists and Colorists, the American Leather Chemists Association, and other groups, in an effort to clarify the great confusion existing as to the various methods of analysis and nomenclature. The association is incorporated under the laws of New York State. Among the producers affiliated with it as charter members are: Atlas Refinery; Arkansas Company, Inc., John Campbell & Co., Consolidated Color & Chemical Co., A. Klipstein & Co., The Martin Dennis Co., National Oil Products Co., Onyx Oil & Chemical Co., Providence Drysalters Co., Royce Chemical Co., Salem Oil & Grease Co., and L. Sonneborn Sons, Inc.

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Standard Hosiery Mills, Inc., Form N. Y. Selling Agency.

The Standard Hosiery Mills, Inc., Alamance, N. C., near Burlington, have formed a selling organization to handle their production of "National Maid" full fashioned hosiery and "White House" fancy half hose, under the firm name of Standard Hosiery Mills Sales Corp., with offices at 271 Church St., New York City. John Shoffner, president of the Standard Hosiery Mills, Inc., is also president of the new corporation. Kenneth G. Russell, formerly with Scott-Bartels Co., is manager of the office.

The Standard Hosiery Mills, organized in 1918 as a partnership, became a corporation in 1928, with a paid in capital of $635,000. In 1918 the weekly production was about 500 dozen while the present capacity is 40,000 dozen weekly. The company owns its finishing plant.

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Materials Handling Institute Organized.

At a meeting held in Cleveland December 8th, and attended by over 70 representatives of materials handling equipment manufacturers, an organization to be known as Materials Handling Institute was formed. The object of the Association is primarily educational to promote a more intense mechanical handling consciousness in the minds of industrial executives, also to promote better understanding of the relationship in a co-operative way between the various groups.

The following officers were chosen: F. E. Moore Mathews Conveyor Co., president; J. B. Webb, J. B. Webb Co., vice-president; H. W. Standert, Northern Engineering Works, treasurer; and J. A. Cronin, "Materials Handling and Distribution", secretary.

A board of governors was elected, one representative from each of the following groups of manufacturers: Hoist and cranes, gravity conveyors, continuous conveyors, portable conveyors, floor trucks and castors, lift trucks and skids, industrial trucks and tractors, transmission, crawler cranes, monorail and accessories. This group of governors were given authority to add to their number after making a study of the industry groups.

A meeting will be held during the week of May 2nd to 6th, during the American Foundrymen's Association meeting at Philadelphia. In the meantime, promotional and educational activities will be carried on under the immediate direction of the officers and proper committees set up for this work.

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Clendinning to Represent Arkansas Co.

Thomas B. Clendinning, of Rossville, Ga., has become associated with the Arkansas Co., 233 Broadway, New York City. He is representing this concern in the states of Tennessee, Alabama and Georgia, with headquarters at Rossville.

T. B. Clendinning.

The company announces that Mr. Clendinning has had many years experience in practical dyeing and finishing, and is also a competent demonstrator.

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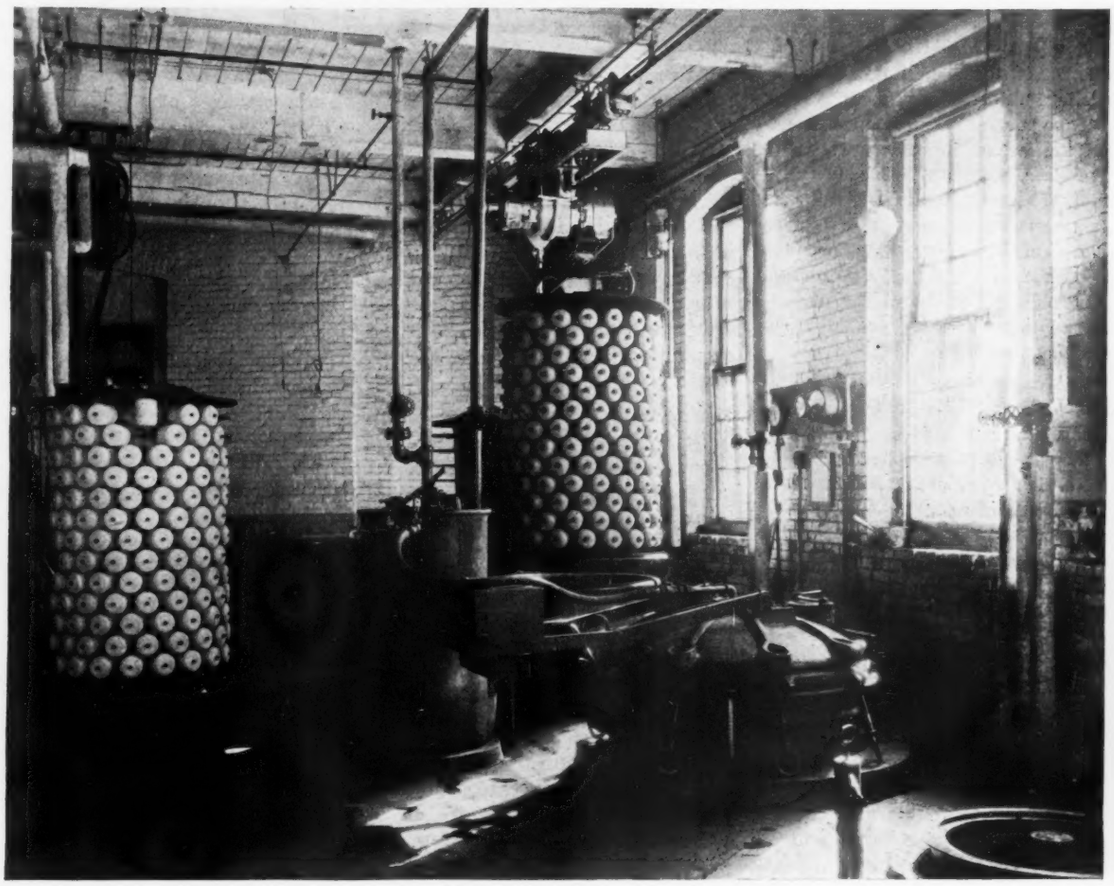
Annual Proceedings of A. S. T. M. are Issued.

The annual proceedings of the American Society for Testing Materials, 1315 Spruce St., Philadelphia, Pa., have been published. This is Volume 31, (1931) and is issued in two parts, both parts comprising more than 2100 pages. Part I contains committee reports, new and revised tentative standards, and revisions of standards. Part II contains the technical papers given at the annual meeting of the Society in June 1931. Each part of the Proceedings is available at the following prices: $5.50, paper binding; $6.00, cloth binding; $7.00, half leather.

Obermaier

REG. U. S. PATENT OFFICE



Dana Warp Mills, Westbrook, Me.

Doubled their original installation of
"Obermaier" Package Dyeing Machinery.

Gibbons G. Slaughter
Box 575
Charlotte, N. C.

Atkinson, Haserick & Co.
152 Congress St.,
Boston, Mass.

AMERICAN OBERMAIER CORPORATION

11-20 FORTY-NINTH AVENUE LONG ISLAND CITY, N. Y.

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

J. F. BLACKMON, a graduate of Clemson College Textile Department in 1916, has been appointed general superintendent of the Pelzer Manufacturing Company, Pelzer, S. C. Mr. Blackmon succeeds J. W. KELLY, who has retired after an association of about twenty years with the company. Mr. Blackmon has been connected with the Watts Mills in Laurens, the Judson Mills in Greenville, and more recently has been superintendent of Pelzer Mill No. 4.

B. R. BURNHAM has become superintendent of Mill No. 4 at Pelzer Mills succeeding Mr. Blackmon. Mr. Burnham has been superintendent at Mills Mill No. 2, at Woodruff, S. C., where he is being succeeded by CHARLES D. GREEN, a Clemson graduate, who has been at Mills Mill for several years.

JOHN P. BAUM has become associated with the Atlanta office of the General Electric Vapor Lamp Co., with offices in the Red Rock Building. Mr. Baum was graduated from the Georgia School of Technology in 1924 and is also a graduate of the Georgia Tech Evening School of Commerce. For seven years he was connected with Robert & Co., engineers. In his new connection he will handle the western division of the territory served by the Atlanta office. FRANK E. KEENER is manager of the Atlanta office.

W. J. HUNTER, formerly manager of the Henderson division of the Consolidated Textile Corporation, Henderson, Ky., has become connected with the group of mills operated in South Carolina by CAPTAIN ELLIOTT W. SPRINGS. Mr. Hunter will be in technical service with headquarters in New York, and will spend a part of his time in the southern territory. He is a graduate in textile engineering at Clemson College, S. C., class of 1915.

W. F. LOWELL, general sales manager, and F. E. BANFIELD, JR., agent of the Biddeford plant, of Saco-Lowell Shops, have been elected vice-presidents of the company, it is announced by D. F. EDWARDS, president. Mr. Lowell will continue to be responsible for sales and advertising. Mr. Banfield, in addition to other duties and as a result of the consolidation of the Newton plant into Biddeford and Saco, will be responsible for all the engineering work of the company.

THEODORE L. HILL has been appointed manager of the Greenville (S. C.) office of the Armstrong Cork Company. His appointment follows the resignation of the former manager, GEORGE H. BATCHELOR. This office is devoted entirely to the sale of textile products, principally Armstrong's seamless cork cots for cotton spinning and card room rolls. For the past seven years Mr. Hill has been engaged in selling cork products to textile mills in New England and southern states.

B. E. GEER has resigned as treasurer of the Judson Mills, Greenville, S. C., and this office has been assumed by W. E. WINCHESTER, of Deering, Milliken & Co., selling agents for the mill. Mr. Geer's future plans have not been announced. His present textile connections include: president, Pisgah Mills, Brevard, N. C.; president, Roswell (Ga.) Mills; president, Piedmont Processing Co.; and president, Southern Worsted Corp., Greenville.

W. C. BOBO has been made general manager of the Pisgah Mills, Brevard, N. C., which have recently resumed operations. Mr. Bobo recently resigned as general superintendent of the Gossett Mills, Anderson, S. C.

C. S. HENEREY, president's assistant, Santee Mills, Orangeburg and Bamberg, S. C., having recently passed a practical examination in classing and stapling cotton, has just been issued a license by the United States Department of Agriculture to classify cotton and to certificate its classification for grades and colors of American Upland cotton and for all lengths of staple.

ROBERT W. BOYS has resigned as superintendent of the cotton division of Farr Alpaca Co., Holyoke, Mass., which position he has held for the past ten years.

J. ALFRED JEPSON has become associated with the Reeves Pulley Co., makers of variable speed transmission, as textile engineer. Mr. Jepson was formerly manager of the Savona Mfg. Co., Charlotte. Charlotte headquarters of the Reeves company, with which Mr. Jepson is associated, and of which D. M. MCSPADDEN is manager, were recently moved from 913 Johnston Building to 910 Johnston Building.

ROBERT O. ARNOLD has been made general manager of the Covington Mills, Covington, Ga. Mr. Arnold has been secretary of the Mallison Braided Cord Co., Athens, Ga.

JOHN H. CRAWFORD has been promoted to overseer of carding at the Clinton (S. C.) Cotton Mills, succeeding J. E. SHAW, resigned. THURMAN KING has been made second hand succeeding Mr. Cranford.

FRANK D. JACOWAY has been made Georgia and Alabama representative of the N. Y. & N. J. Lubricant Co., succeeding the late WARD H. HIGGINBOTHEM.

B. G. WOODHAM has become connected with the Sonoco Products Co., Hartsville, S. C. Mr. Woodham is a graduate of Clemson College, S. C., and has mill experience at Lancaster, S. C., and later as assistant manager of the Kendall Mills, Newberry, S. C. He is representing the Sonoco Company in connection with a new line of cork cots for drafting rolls.

C. M. POWELL, formerly for 16 years superintendent of the Cabarrus Mfg. Co., Kannapolis, N. C., and more recently connected with the Atlanta office of the Whitin Machine Works, has become assistant manager of the Johnston group of mills, with headquarters in Charlotte, N. C.

J. L. FONVILLE has been made superintendent of the King Cotton Mills, Burlington, N. C., filling the position formerly held for many years by the late T. L. CURLEE.

Obituary.

M. E. ROGERS, assistant superintendent of the Equinox Mills, Anderson, S. C., died on Christmas morning, 1931, following an illness of several weeks after an attack of pleurisy and other complications. He had been in Anderson for 13 years with the Equinox Mills, removing there from Massachusetts. He was 43 years of age, and his widow and a son and a daughter survive.

HAL T. POE, secretary of the F. W. Poe Mfg. Co., Greenville, S. C., died at his home on December 28th, at the age of 75 years He is survived by three sons, and two daughters. He was a brother of the late N. C. POE, SR., and the late F. W. POE, SR.

GOOD GAINS

Good gains follow the installation of Barber-Colman *Automatic* Spoolers and *High Speed* Warpers in place of ordinary machinery for spooling or winding and warping. Among other benefits will be a noticeable *decrease in loom stops*, due to the Automatic Spooler (*not* to the High Speed Warper, as we have said before). Tests over a period of several years indicate that 20 to 25%—and sometimes more—saving in loom stops will be obtained. Of this useful saving, other tests show that *more than 90% can be traced to the Automatic Spooler.* Let us give you the details on these and other *good gains* you can obtain from Barber-Colman machines. Write us—wire us—or phone us.

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ROCKFORD, ILLINOIS

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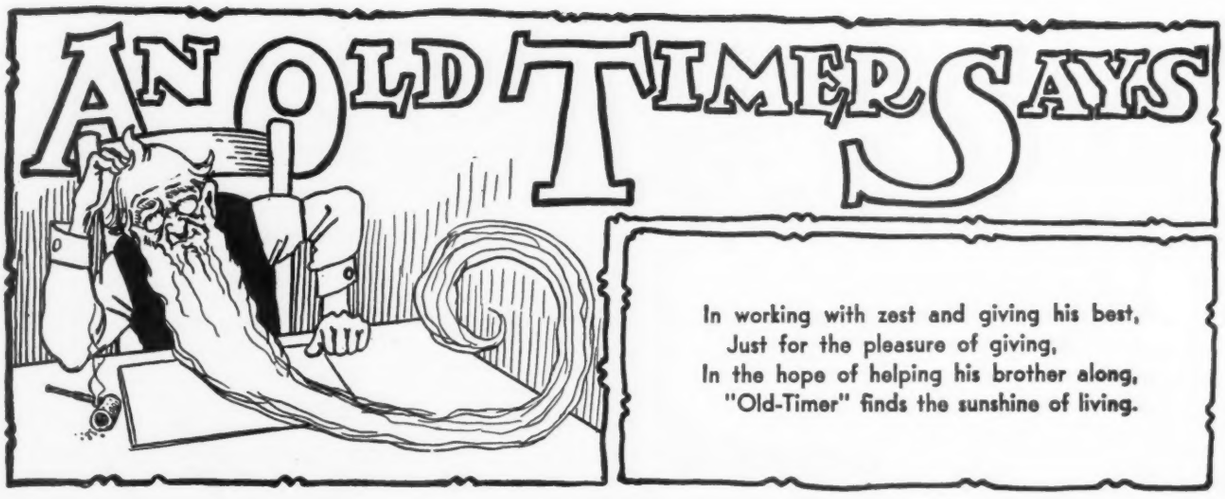

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

The Story of Old Timer's Methods of Working and Management

How Old Timer learned the mill game; a simple system that brings results, and has stood the test of 35 years of changing conditions in manufacturing.

A Personal Word.

IT IS with unusual pride and enthusiasm that we start, in the adjoining column, an extensive article or series by Old-Timer. It is built around the systems and methods developed by Old-Timer in his progress upward through the mill and used today in the management of his mill. In describing these, Old-Timer has unconsciously given us the story of his mill career—and we know that every reader, young and old, will relish the opportunity to learn more of the background, experience and methods of their friend who conducts this department in COTTON every month.

A vivid description of how Old-Timer learned to fix looms, under the conditions of almost two-score years ago, will be contained in the second installment, to appear next month. The fundamental methods developed at that time, were subsequently extended to apply to the entire mill. How this was done is described in useful detail in succeeding installments.

A familiarity with the system permits us to say that, while it originated on looms, it works on cards, fly frames, spinning frames—and on any kind of machinery; and, to borrow an Old-Timer expression, it works wonders on a human being, on his personal work.

And it has worked well enough over all these years, and in the face of changing conditions, changed machinery, etc., and is working well enough today, that we know of a young college graduate, who when put on a section of looms, promised to follow the system, and in six months' time was standing at his work bench watching old fixers, who had been fixing looms before he was born, work their heads off!

This is the start, then, of an opportunity to dig into the experiences of, literally, a lifetime of experience in every phase of the mill; a document nothing short of a romance, interestingly and helpfully told. Having read the entire series, and being unable to present it all at one time, we urge that you preserve your copy of the installments as these appear from month to month, so that you may refer back to them —as you will want to do—and so that you may keep the entire series intact.—The Editor.

(Note: Since this series is written in conversational style, it should be borne in mind that those paragraphs in *italics* represent Jim's part of the conversation, and those in regular type are Old-Timer's part.)

Hey, there! OLD-TIMER, *where you going?*

Hello! JIM. How are you, old top?

Fine. Hope you're the same.

Well, I am feeling fine, JIM, so far as my physical condition is concerned, but mentally, I'm no good. If conditions in the textile business don't improve pretty soon it looks like we are all going to have to do something else.

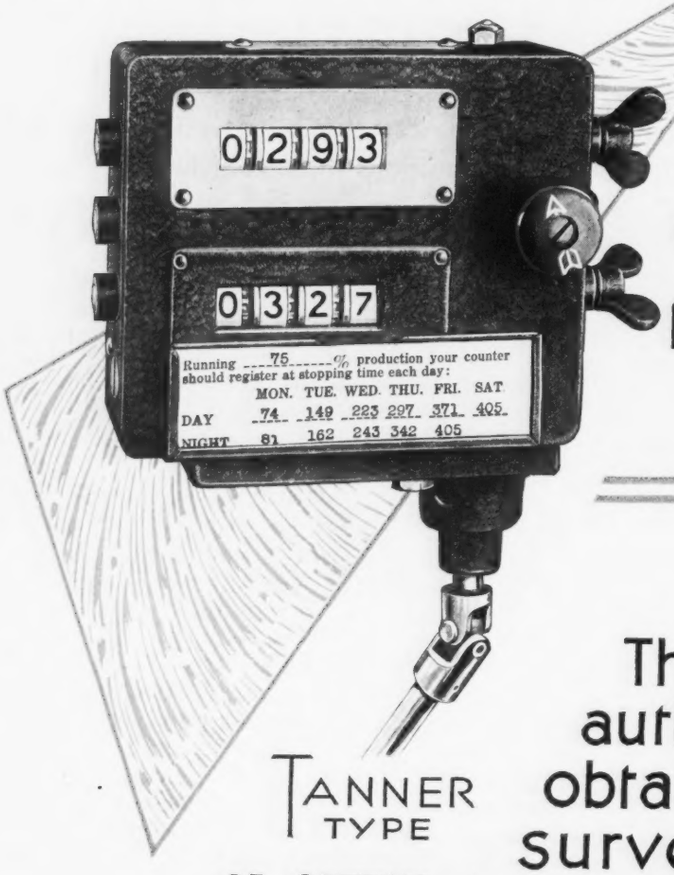
Well, what are you going to do, OLD-TIMER?

Darned if I know, JIM, but a fellow always thinks there is something else he can make a better living at than what he is doing. We can always see the bad side of our own jobs and nothing but the good side of the other fellow's job. You've seen the cartoon of two mules in adjoining pastures—each mule had his head pushed through the fence and was straining against the barb wire, to eat grass out of the other pasture. Each one thought the grass was better in the other's pasture. So it is with our jobs—we always think the other fellow has the best job—without realizing that

Veeder-ROOT PICK COUNTERS

show average investment return of 54%

on standard Counters and on re-setting type a return of 69%


0293
0327
ADD
Running 75 % production your counter should register at stopping time each day:
MON. TUE. WED. THU. FRI. SAT
DAY 74 149 223 297 371 405
NIGHT 81 162 243 342 405

TANNER TYPE
RE-SETTING PICK COUNTER

These are accurate authenticated figures obtained by actual mill survey and analysis. Let us give you complete data

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Veeder-ROOT INCORPORATED HARTFORD, CONN.

Carolina Specialty Company, Charlotte, N. C., Representative in Georgia, Tennessee, Alabama and Mississippi

COUPON:

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GIVE US THE DATA from your survey and analysis of the average investment return recorded in mills using your Loom Pick Counters.

he is thinking the *same thing* about us.

You haven't said yet, where you were going, OLD-TIMER.

Say, JIM, if I were to tell you where I had really started you would laugh and say to yourself: "the old fool."

Now, hold on, OLD-TIMER. *There was a time when I might have been guilty of that. In fact, I have laughed at some of your ideas; but for the past four years I have pursued the policy of trying to understand just what you are driving at when you are beating the devil around the stump, as the slang expression goes—and when I can fully understand your slant, I have usually been helped by listening for you have given me food for thought, which has, in several instances, been the cause of my getting new ideas of my own. But you still haven't told me where you were going when I hailed you.*

Well, Mr. Curiosity, if you must know, I was going down here to buy me a straw hat—

Haw! Haw! Oh! Haw Haw! . . . Buy a straw hat—What are you trying to do, kid me?

Rave on, JIM—I knew that was just what you would do—see you later.

Wait a minute, OLD-TIMER. *I didn't mean any offense. Really I didn't. Now stop and think a minute and you will realize how funny and absurd your remark sounded. Here we stand all wrapped up in our overcoats, and then about to freeze, and you come out with the wise crack that you had started to buy a straw hat. Now come out with it and tell me the joke.*

Joke, the dickens. I meant just what I said. I buy my straw hats in the winter. In fact, I buy just as many things *out* of *season* as I can; that is, things that will not be made worthless by a change of style. Of course straw hat styles change pretty often, and I don't have any idea what they will be wearing next summer, but I do know the Panama hat I saw in ———s window last summer will be in style, and that particular style of Panama suits me and I am going to buy it. It was priced $10.00 last summer, so now watch me get it for $5.00, and certainly not over $6.00.

If that is your plan, OLD-TIMER, *what are you doing with that new $90.00 Hickey Freeman overcoat on?*

Not so fast, JIM. I bought this coat last spring for $50.00. So you see I practice what I preach.

Well I'll be confounded, OLD-TIMER, *you have given me a thought that I am going to cash in on—and that reminds me—you remember when you were over home the last time; you started to tell me how you learned to fix looms and before you got to the point the old lady called us in to dinner and you did not get back on the subject again. However, since the plan you used in teaching me to grind cards, and get my cards set up correctly, after I was made overseer, worked so well in my case, I am now anxious to know what your plan was for learning to fix looms.*

Well, JIM, it would of course be too long a story to go into full details, but I will tell you enough to convey the idea—but you mention *my* plan. I am frank to admit I had no set plan at first, but my method of work was the result of a real desire to find out why practically every loom was a problem within itself and why no one I could find could really give me much information about fixing.

Oh yes, there were numerous expert loom fixers who could tell me exactly how the pick motion should be set; how the harness cams should be set, the filling motion and all the other motions about a loom, but I have never found the man who could tell me exactly how to set up a loom so I could set a hundred or a thousand of them that way and they would run.

No sir, it don't seem to be possible to do it. Now with a picker machine, a card or a spinning frame, you can come nearer having a setting which will work on a large number of machines, but a loom is an entirely different animal.

I claim that running a section of looms is the most interesting work in a cotton mill and that a man has more opportunity to show his individuality, so to speak, than on any other kind of textile machinery.

Just what are you driving at anyway, OLD-TIMER? *You must not forget that I was originally a card grinder, and you must explain your loom fixing to me in a way that I can understand it.*

All right, JIM. Here are just a few simple illustrations. Go through most any weave room and look at the hold-up straps on the picker sticks. You will see that some of them are loose on the wood screw which fastens the strap to the picker stick. Now a hold-up strap that slips on the wood screw each time the picker stick makes a stroke, will probably not last more than three months—that is, the hole where the wood screw goes through the hold-up strap will gradually enlarge until it wears through and lets the lug strap drop down, thereby putting a terrific strain on picker stick, lug strap, pick arm, pick shaft and in fact all parts of the loom. The loom bangs off or the operator discovers the lug strap down, stops the loom and flags for the fixer.

All of this could have been easily avoided if when installing that hold-up strap the fixer had simply turned the wood screw *one or two* more rounds so the screw would have held the strap *tight* against the stick.

The hold-up strap would last almost indefinitely; there would have been no stoppage of the loom and the fixer would not have been called back to that loom.

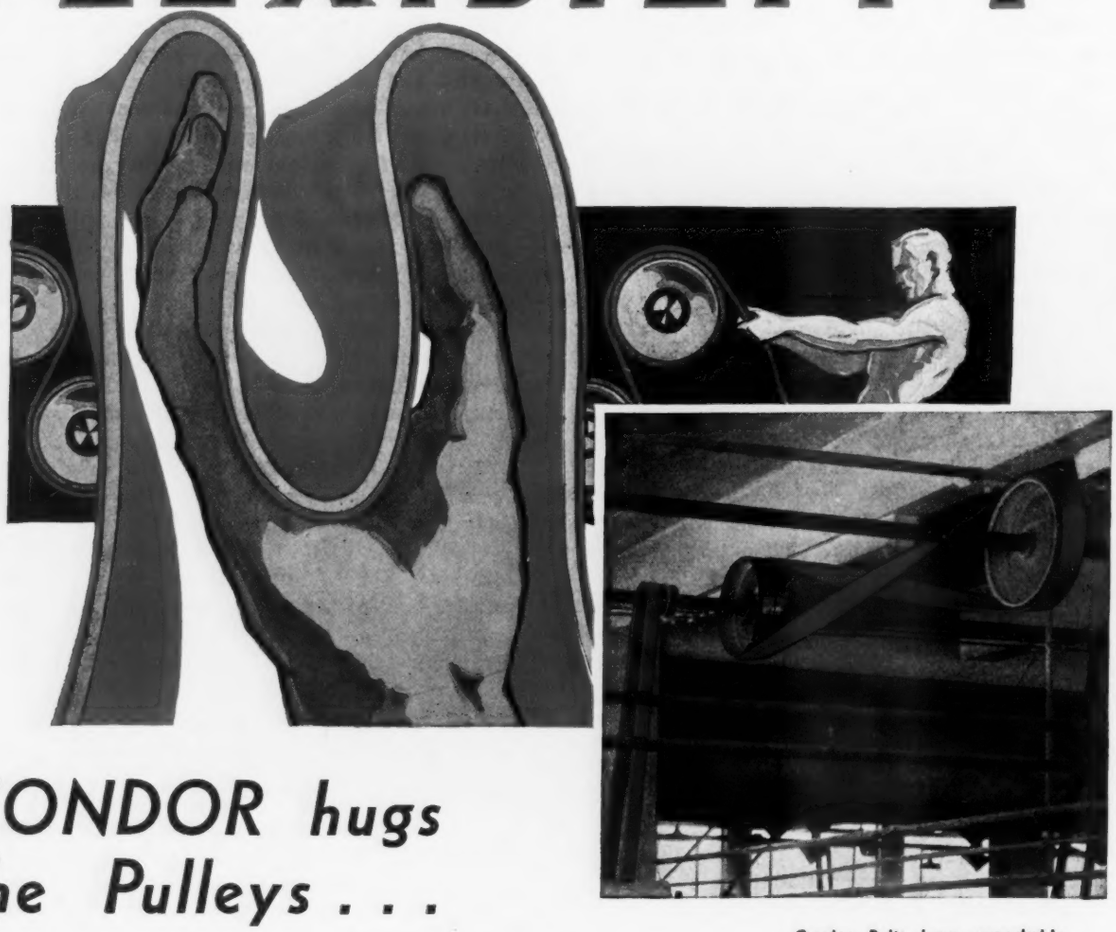
In other words, if you and I both put on a hold-up strap—you put yours on correctly and I put mine on as described—then I am doing double the work you are doing because I am called back to my loom in three or four months. While you do not have to return to yours and you are drawing the same pay as I am for running the section.

Yes, I see that plainly enough, OLD-TIMER, *and there are some jobs on cards that are almost a parallel to that, but surely there are not many jobs on looms that are like the lug strap. Surely there are not many fixers who are careless enough to do such jobs.*

That is just the thing I cannot understand, JIM. Why a supposedly good fixer will do such jobs I cannot see.

I believe it is a conservative statement to say that the large majority of fixers are working at least 40 per cent of their time on jobs which they would not

FLEXIBILITY



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CONDOR hugs the Pulleys . . .

—around small pulleys, at every contact, Condor can be depended on to deposit the right portion of its power-load for effective, uniform, and economical production.

—this is the result of 39 years continuous development and improvement of the FLEXIBILITY factor in Condor belting.

—users report the execution of difficult drives economically.

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Air Hose	Fire Hose	Oilless Bearings
Cone Belt	Steam Hose	Rubber Lined Tanks

Industrial Brake Blocks and Lining

—try Condor "work muscles" to your own satisfaction—your jobber will gladly arrange this for you.

Condor's

The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.

Executive Offices and Factories, Passaic, New Jersey

have had a flag on if they had done the job correctly at first.

Let me suggest, JIM, that you look at the picker sticks which are taken out and see the cause *why* they were taken out. Practically every stick will tell its own story.

Note the number which have been split by inserting too large a wood screw to hold the picker or the hold-up strap.

Look for the sticks which have split because the lay end did not have a piece of leather in it for the stick to strike against as the shuttle knocks it against the end of the lay.

It would take a fixer less than five minutes to put a piece of leather in the end of lay—it will take him 30 minutes to put in a picker stick and parallel his pickers—and *he* knows it as well as anyone, in fact, better than most anyone—yet he will walk right by a loom with no leather in the end of lay and not stop to fix it until he is *made* to fix it by the picker stick breaking.

If you put in a new shuttle and do the job so you will not have to go back to that loom more than once to get the shuttle settled down to running well, and I put in a new shuttle and have to go back to mine twice, then I am doing twice as much work as you are and not drawing any more pay. That is why I say running a section of looms is such a fascinating job. *The more you work your head the less you work your hands.*

Shucks! That's a fact with most any kind of work, OLD-TIMER.

Yes, I know, JIM, but not to such an extent on any job in the mill as on looms. The point I wish to bring out is that so many loom fixers do not seem to realize it. To illustrate again: The other day I saw a good fixer get a new shuttle ready to put into the loom, but he never tightened the shuttle spring. He took for granted that it had been tightened sufficiently by the shuttle manufacturer, and maybe that particular shuttle spring had, but suppose you go in the supply room, JIM, take a large screw driver and see if the shuttle springs are tight in all the new shuttles.

If that fixer put in a shuttle in which the spring was not sufficiently tightened it will only be a few months, or possibly weeks, until he will have a flag on that loom for knocking out filling or something like that caused by a loose shuttle spring, while if he had only done the job right at first, he would have saved the lost production on that loom and saved his time in going to a job that could easily have been prevented.

Wait a minute, OLD-TIMER. *Haven't you forgotten the question I asked you?*

How do you mean, JIM? I am talking to you about fixing looms, am I not?

Sure, but that's not what I asked you. I asked you to tell me how YOU *learned to fix looms.*

Well, to tell the truth, JIM, I'd rather not get too darned personal, and my little plan was so simple that it would start a lot of fellows to laughing at OLD-TIMER.

Let 'em laugh, make fun, or do what they please. You once told me that you never lost the premium but one month while you were on a section, and that was because your section changed styles of goods that month and the second hand did not know how to figure your production correctly; and if that is a truthful statement you must have learned how to keep the looms running some way.

You're mixed up a little, JIM. It was not the production on my section that he figured wrong, but the production on another section. He gave that section a percentage of production that beat me, but I finally received my premium for that month when I got the information to the overseer in a round-about way. I was of course afraid to go to the overseer myself, because the second hand would have made it hot for me.

It was this way, JIM: A section upstairs (my section was downstairs) changed eight looms onto a new style of goods a day before the first of the month, and as no cloth came off the first day, those looms made a day's production that went into the next month. Then, on the last day of that month the cloth came off of six of those looms, leaving them stripped. This gave them a production percentage of 112 per cent. The other 80 looms on that section got 98.5 per cent. Well, the second hand added 112 and 98.5 together, divided by two, and put up 105¼ per cent production for that section.

Well, I'll be darned, OLD-TIMER. *Didn't anybody know how to figure that percentage?*

Hold on, JIM, that wasn't *yesterday;* and don't forget there was a time when *you* didn't know how to make that calculation.

(Editor's Note: The man who was on the section referred to is now a successful superintendent of one of the large mills of the South, and incidentally, OLD TIMER was once a superintendent of that same mill. This is mentioned merely to demonstrate that this is not fiction, but an actual experience.)

Come on, now, OLD-TIMER, *quit beating the devil around the stump, and answer my question. How did you learn to fix looms?*

(Editor's Note: And so we must leave Old-Timer and Jim for this time. However, this is only a start into this series of experiences taken out of actual work by Old-Timer. Next month he begins to answer Jim's question, and we know you will want to read how Old-Timer learned to fix looms. We hope, therefore, that you will be on the look-out for the next installment. In this connection, let us repeat the suggestion that you preserve your copies of COTTON containing installments of this series, or clippings of these articles at any rate, so that you will be able to keep the entire series intact and go back over previous installments.)

Reports Progress.

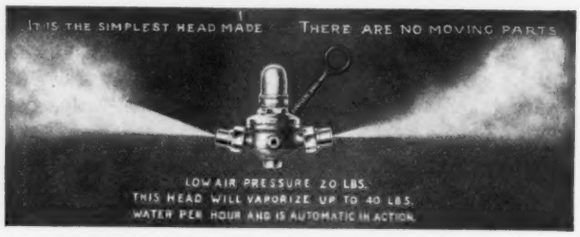
President Sloan of the Cotton Textile Institute states that operating conditions in the textile industry during 1931 were 87 per cent of the ten-year average; that there was more constructive co-operation in 1931 than ever before, among cotton manufacturers. The recommendation to shorten the work week has been widely adopted, and approximately 84 per cent of the industry is not employing women and minors at night.

The members of the industry must continue to support the constructive undertakings thus far devised by participating in the work of the small groups. They must put their own houses in order. This has been largely done.

Price cutting, however, is still producing its destructive effects. This must be sensibly handled.

UPKEEP?...

low—so low that it Adds to Your Humidification Savings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THERE ARE NO MOVING PARTS
LOW AIR PRESSURE 20 LBS.
THIS HEAD WILL VAPORIZE UP TO 40 LBS.
WATER PER HOUR AND IS AUTOMATIC IN ACTION.

When upkeep is low, you save more through Humidification. RIHCO Humidifiers, small in size but large in evaporative capacity deliver as much water as your mill needs. And yet there isn't a single moving part in the Heads. Nothing to get out of order. The Heads will not clog, even in a lint filled room. You don't have to put on one extra man to take care of the RIHCO system. The small Heads can go in any spot. They are automatic. Day and night, often for months, they deliver water with hardly a minute's care. That's what gives you all the savings you should get when you humidify your mill. A RIHCO engineer will gladly call and give you figures on upkeep. Write.

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SIZING FINISHING
WARP SIZING SPECIALISTS
SEYCO SCIENTIFICALLY PREPARED TEXTILE CHEMICALS SEYCO
A CONCERN IS KNOWN BY THE CUSTOMERS IT KEEPS—
FINISHING SIZING
ATLANTA, GA.

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

A Debate on Card Grinding Speeds.

This interesting exchange of letters will undoubtedly present to you a new angle on the matter of card grinding speeds, and may surprise you in showing on what determines the comparative value of different grinding speeds. Read these discussions, and tell us, either for publication or not, what you think, and why.

EDITOR COTTON:

On page 1167 of the October issue of COTTON, a contributor, who had found it necessary to increase the production of his cards, states that the work off of the cards is back to normal after he had speeded up his grinding rolls, etc. Probably this is actually true, however, if the whole thing is figured out it is hard to see how he can be getting better results in his grinding and in the end he may be fooling himself. According to his figures the speeds were as follows:

	R.P.M. of Cylinder	R.P.M. of Grinding Roll	Traverses per Min.	R.P.M. of Doffer	R.P.M. of Grinder Roll	Traverses per Min.	R.P.M. Top Flat Grinder
Old Speeds ...	156	430	2	280	430	2	725
New Speeds ...	165	700	3⅛	300	700	3⅛	775

Now, the things to be considered in the abrasion or cutting of metal by grinding are: the speed at which the cutting is done, the pressure of the part being cut against the cutting material, and the length of time that the abrasive material and the part being cut are held in contact. In the case of grinding cards, the amount of grinding done is determined by the combined surface speed of the wire and the grinder, the depth at which the grinder is set to the wire; and the number of times or length of time that the grinder is in contact with any given point of wire.

Assuming that this contributor has 40-inch cards with 50-inch cylinder, and is using a traverse grinding roll approximately 6⅞-inch in diameter and 3½-inch face; using these figures we can work out the following details as to surface speed on his former speeds:

$$\frac{50\frac{3}{4} \text{ inches} \times 3.1416 \times 156 \text{ r.p.m.}}{12} = 2074.8 \text{ feet per minute cylinder speed}$$

$$\frac{6\frac{7}{8} \text{ inches} \times 3.1416 \times 430 \text{ r.p.m.}}{12} = 774.0 \text{ feet per minute grinder speed}$$

2848.8 Total

On the new speeds he gives:

$$\frac{50\frac{3}{4} \text{ inches} \times 3.1416 \times 165 \text{ r.p.m.}}{12} = 2194.5 \text{ feet per minute cylinder speed}$$

$$\frac{6\frac{7}{8} \text{ inches} \times 3.1416 \times 700 \text{ r.p.m.}}{12} = 1260 \text{ feet per minute grinder speed}$$

3454.5 total

If the grinder is set to the wire the same in both cases, then the matter of pressure is the same and need not be considered.

The next thing to find out is the number of times or length of time that the grinder is in contact with the wire.

◆ ◆

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and willl be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Old Speed.

156 r.p.m. of cylinder = 2 traverses per minute of grinder
78 r.p.m. of cylinder = 1 traverse per minute of grinder or 40 inches in side movement.
1 r.p.m. of cylinder = 40 ÷ 78 = .51 inch in side movement of grinder per revolution of cylinder.

$$\frac{3.5 \text{ inches (face of grinder)}}{.51 \text{ inch}} = 7;$$ or each point of wire strikes grinder 7 times per traverse.

New Speed.

165 r.p.m. of cylinder = 3⅛ traverses per minute of grinder
50 r.p.m. of cylinder = 1 traverse per minute of grinder or 40 inches in side movement.
1 r.p.m. of cylinder = 40 ÷ 50 = .8 inch in side movement of grinder per revolution of cylinder.

$$\frac{3.5 \text{ inches (face of grinder)}}{.8 \text{ inch}} = 4.4;$$ or each point of wire strikes grinder 4.4 times per traverse.

By combining the surface speeds and the number of times of contact into a factor, we find the grinding possibilities are as follows:

2848.8 (old surface speed) × 7 = a factor of 20041.6
3454.5 (new surface speed) × 4.4 = a factor of 15199.8

$$\frac{20041.6 - 15199.8}{20041.6} = 24.2 \text{ per cent less grinding with new speed.}$$

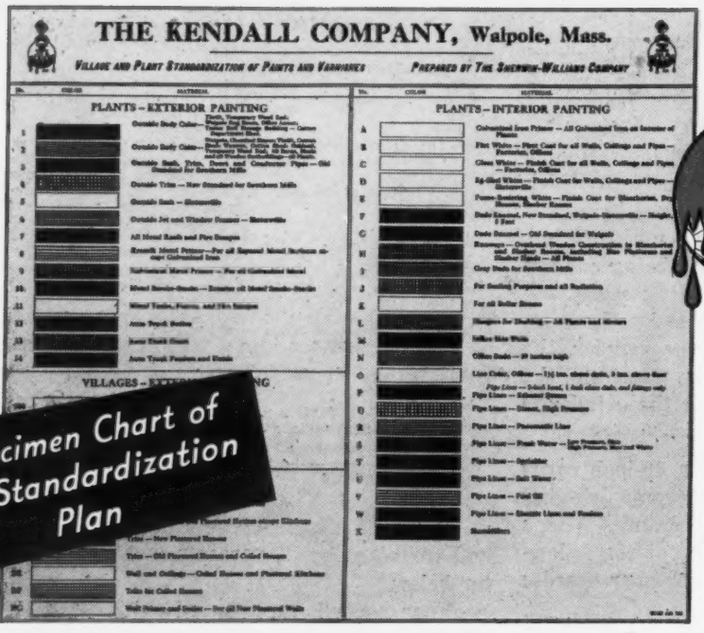
(Editor's note: These calculations are criticized and corrected by "CONTRIBUTOR NO. 5080" in his letter below.)

Your contributor concludes his letter by saying, "This experience shows the danger of taking things for granted. We have been grinding for seven years at the slow speed just because we took it for granted that the rolls were all right."

While we are on the subject of "taking things for granted," it might be said that 99 per cent of the mills today are taking it for granted that a set of grinding rolls should be put on a card and allowed to grind all day; no one seems to know whether it can be done equally as well in one or two hours. We have all been taking it for granted that it took all day. Very few realize the cutting or abrasive possibilities with a cylinder running 165 r.p.m., and a grinding roll running 600 r.p.m., which when figured out is about 3,300 feet per minute or almost 38 miles per hour. Go into

. . . "of FIRST CONSIDERATION"

SAYS R. S. HOWLAND OF THE KENDALL CO.


THE KENDALL COMPANY, Walpole, Mass.
Village and Plant Standardization of Paints and Varnishes
Prepared by The Sherwin-Williams Company
PLANTS—EXTERIOR PAINTING
PLANTS—INTERIOR PAINTING

Specimen Chart of S-W-Standardization Plan

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THE SHERWIN-WILLIAMS CO., CLEVELAND, OHIO

R. S. Howland, Purchasing Agent of the Kendall Company, makers of Curity Products, writing on "Why we Maintain Our Plants on the Sherwin - Williams Standardization Plan," makes the following statement:

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the machine shop, and it will be found that the surface speed of the emery wheel used to grind off heavy castings is only about twice as much as this, surely a delicate job like grinding one hundred thousandth of an inch off the end or side of a small wire should not take all day. By using figures we have here before us where each point of wire is struck 7 times per traverse and making two traverses per minute, we find that $7 \times 2 \times 60 = 840$ times an hour that each point is struck. This would probably not be enough in case the wire had been jammed and the surface had to be trued up, but in the ordinary grinding of a card we maintain that it is enough, for the object of grinding is not to grind off any wire, but to corrugate the side of the wire at the point.

To the contributor who at least didn't take it for granted as to what his grinding speeds were, it is suggested that he grind his cards for a shorter length of time and be governed by the time it takes his flats to make a complete revolution. In other words, put the flat grinder to work; then set the traverse rolls to work on the cylinder and doffer. Mark the flat where the grinding started and allow the card to grind until the flat that was marked has made one or two revolutions. The rolls are then put on the next card (which the card grinder has cleaned in the meantime) and allowed to grind the same as the first card; while the second card is grinding, the card grinder sets up the back and front of the first card, cleans out the third card, etc.

We have found that one man with one set of rolls can do five cards in a 10-hour day. The emery fillet on the traverse grinders should be changed every 25 cards, the fillet on the flat grinder will last a little longer. This means that Saturday mornings the card grinders do not grind any cards but spend their time changing the fillets and cleaning up. In June and December the card grinders should grind cards in the mornings and spend the afternoons taking out the screens for polishing and afterward reset; the flats reset and worn studs and gears replaced where needed.

The advantage of this system is that the cards are ground light and often (every ten days); the card grinder is always with his rolls; better results can be obtained at the same production per card or equal results can be had at an increase in production per card; the number of card grinders on the payroll can be reduced almost by half and allow the cards to be ground every month or the same grinders can be kept and each card get a grinding every two weeks. Any of which reasons will be an improvement—don't take it for granted, but try it.

I might say that at the present our grinders are doing 25 cards a week each, and I believe it is equally as good as the old way of about 10 a week each. They do nothing but grind and set cards. All of our bands are of the endless type, which we buy, and this is really a saving instead of the grinders taking time splicing their own. All oiling is done by the card hands. We have 156 cards running night and day.

CONTRIBUTOR No. 6026.

EDITOR COTTON:

In studying over the comments of "CONTRIBUTOR No. 6026" concerning my article on card grinding speeds, a copy of which was sent to me before publication, I have found an error which I should like to correct.

I refer to the computations made by "CONTRIBUTOR No. 6026" which he uses to show that with my new speeds, I get "24.2 per cent less grinding." A study of his calculations shows that in these calculations he multiplied the surface speed by the number of times per traverse that a wire comes in contact with the grinding roll. This is in error, because it is necessary to use the number of times per minute, and not per traverse, as will be seen in my calculations which follow. The grinding effect is dependent upon the combined surface speed in feet per minute and the number of contacts made per minute; in his calculations, "CONTRIBUTOR No. 6026" has disregarded the number of traverses made per minute.

Incorporating this important element, I will proceed to clear up his calculations as follows:

Time of Contact.

Old Speed.

156 r.p.m. of cylinder to 2 traverses per minute or 80 inches

1 r.p.m. of cylinder to 80 ÷ 156 = .513 inches per revolution.

$$\frac{\text{3.5 inches (face of grinder)}}{.513} = \text{6.83 times the wire comes in contact with grinder roll } \textit{per traverse.}$$

$6.83 \times 2 = 13.66$ times *per minute.*

New Speed.

165 r.p.m. of cylinder to 3⅓ traverses per minute or 133.33 inches.

1 r.p.m. of cylinder to 133.33 ÷ 165 = .808 inches per revolution.

$$\frac{\text{3.5 inches (face of grinder)}}{.808} = \text{4.34 times the wire comes in contact with grinder roll } \textit{per traverse.}$$

$4.34 \times 3\frac{1}{3} = 14.46$ times *per minute.*

It is interesting to note that the number of times a point on the cylinder comes in contact with the grinding roll is proportional to the r.p.m. of the cylinder.

$$\frac{156}{165} = \frac{13.66}{14.46}$$

The number of traverses per minute does not affect this ratio, as the traverses per minute of the grinder varies directly as the surface speed in feet per minute of the grinder or its revolutions per minute. This of course is because the grinder when its speed is changed still operates on the same screw so that any change in its revolutions is transmitted directly to the number of traverses per minute which it makes.

The grinding factors now become:

2848.8 × 13.66 (old speed) = 38,914.6
3454.5 × 14.46 (new speed) = 49,952.

These new factors show:

$$\frac{49{,}952 - 38{,}914.6}{38{,}914.6} = \text{28.4 per cent } \textit{more} \text{ grinding with the new speeds instead of a decrease as figured by our friend.}$$

Thus we find an increase of 21.25 per cent in the combined surface speeds (the difference between 2848.8 and 3454.5) and an increase of 5.85 per cent in the number of contacts (the difference between the cylinder speeds of 156 and 165 r.p.m.)

$$38{,}914.6 \times 1.2125 \times 1.0585 = 49{,}952.$$

"CONTRIBUTOR No. 6026" goes on to suggest that a card can be ground just as well by grinding for a shorter time and more frequently. I can heartily

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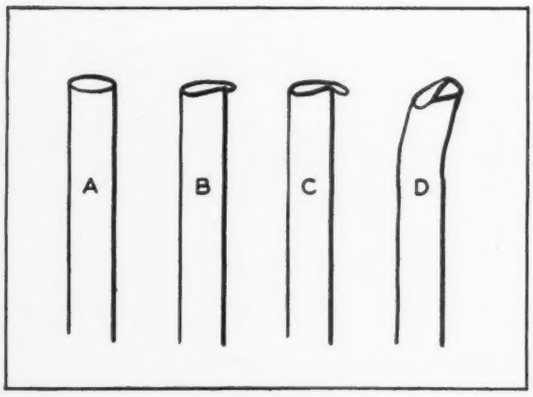

agree with this. We have reduced our grinding time 30 per cent with our new speeds and get better grinding results.

The explanation for the better results from the higher grinding speeds seems to be that instead of polishing the ends of the hardened and tempered wires and leaving a smooth round front, see *A* in illustration, the wire is drawn slightly forward giving a sharp pointed tooth, *B*, which picks up and holds the fibers better. The result is a true combing action instead of a rolling action. Care must be taken not to grind too heavily at these higher speeds. Heavy grinding will result in hooked wire, *C*, or bent wires with a double bevel and no carding value, *D*.

CONTRIBUTOR NO. 5080.

Do Different Size Top Rolls Cause Variation in Yarn Number?

EDITOR COTTON:

With the growing use of cork cots for covering top rolls on the spinning frame, and with the practice of buffing them to a diameter smaller than the original diameter when they become creased or worn, there is one question I would like to submit to COTTON'S readers. Will not different size top rolls cause variation in yarn numbers? While the thought expressed with regard to cork cots prompts this, the inquiry is of course applicable to leather covered rolls as well.

I am not situated so that I can experiment along this line, so I can only give my reasons for being uncertain enough on this point to want to see it discussed in the "How Other Men Manage" department.

The top roll is revolved by frictional contact with the bottom roll, so that it would seem that the surface speeds of the small and large diameter top rolls should be the same. However, according to my reasoning, there will be less slippage between the surfaces of the large top roll and the steel roll than between the small top roll and the steel roll, because (1) the larger top roll makes contact with the steel roll over a greater area when the weight is applied; and (2) the larger top roll is more easily revolved by frictional contact on account of its greater radius, which means increased leverage.

I have seen some top rolls on the spinning frame run under dry saddles, and the increased load caused by lack of lubricant makes enough slippage between the top and bottom rolls to cause the yarn number to run 30s instead of the 40s being delivered by rolls with well oiled saddles. Proper drafting was not taking place because the surface speed of the top rolls had been retarded. To a smaller degree than in the example given, there would seem to be greater slippage between the roll surfaces where the smaller diameter top roll is used, so that, as I see it, the smaller diameter front top roll will make somewhat coarser yarn than the front top roll of larger diameter.

What do you think and what do you find?

CONTRIBUTOR NO. 6029.

Why Two Cards Can't Be Set the Same.

Also, answering the inquiry as to the difference in carding characteristics of long and short staple.

EDITOR COTTON:

One of your contributors has asked why it is that all cards cannot be set alike and to the same gauge from flats to cylinder. There are any number of things that govern this setting of the cards. Consideration must be given to the age of the clothing on the flats and on the cylinder of the various cards; the number of times they have been ground; also, where more than one grinder is employed, the human element establishes itself. Since two grinders will not grind the teeth to a mechanical likeness, it remains that they will not have the same "feel" in their setting of the card. It must be remembered, too, that the condition of the bearings on the card must be considered. If the bearings on one card are worn more than the bearings on another card, then the flats on the card with the worn bearings must not be set as close as the flats on the card with good bearings. The flexible bend may also be worn more on one card than on another, and it may be worn in a different place on the several cards, thus affecting the setting of the flats, as well as affecting the position of the flats in their relation to the cylinder.

Don't forget that the condition of the floor on which a card sits also affects the setting. If the floor permits the card to vibrate, this card must necessarily be set to a wider gauge than the card which rests over a sturdy beam or on a section of very steady floor.

Attention might be given here to the fact that the more times the wire has been ground the shorter it will be, and when the card is proceeding in its carding action, this shorter wire will naturally not bend back as far as will the newer and longer wire. A different setting of the shorter wire from that of the longer wire is necessitated because of the ability of the longer wire to bend farther back, and thus create a closer setting of its own.

Your contributor also asks the cause of high and low flats after they have been in use for 10 to 15 years, and what can be done to make such flats uniform. He explains that when the low flats are set to the proper gauge to card the cotton, the high flats rub and face; when the high flats are set properly, the low flats are so far away that they will not card as they should.

This condition might be explained by stating that no two things will wear alike, nor would they in a

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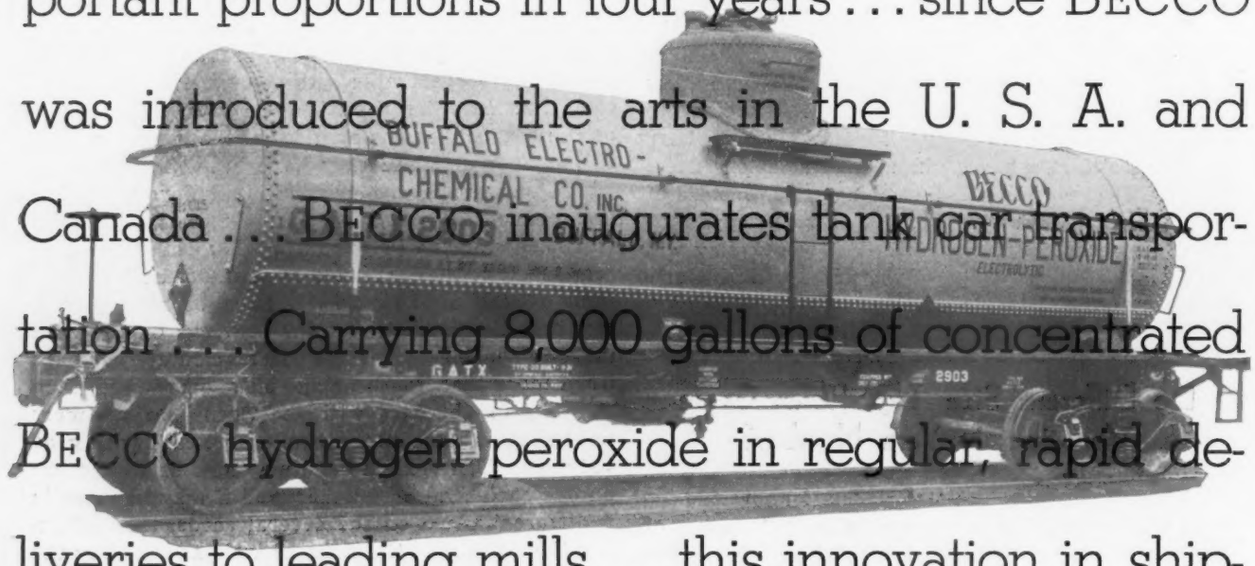

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period of 10 to 15 years be subjected to exactly the same working conditions. That part of the flats which rides the flexible bend will wear differently on the same card and on the several cards. To be considered in this connection is the fact that while the flats were ground on the card, they were ground with the wire pointing upward, while the wire points downward as the flats are carding the stock. Thus the element of variation of the wear on the top and the bottom of the flat ends must be given thought. While you were grinding the flats on the card, you were not grinding them in relation to the wear on that part of the flat end which rides the flexible bend when the flat is in its carding position. Thus every bit of the wear on this flat end is immediately shown in the form of a high flat, and not compensated for, at all, in the grinding of the cards.

The temper of the wire may be different on the various flats and so affect their wearing qualities. The softer wire will grind down more than the harder-tempered wire.

The remedy for this high and low flat condition is to take the flats off the card and grind them on a special grinding machine made for this purpose. An accurate gauge is used in this connection to assure the proper precision. Also, when the flat ends are worn, a flat-end milling machine should be used to mill the ends down to their proper bevel. If this work is done expertly, the flats can then be gauged on the card with the satisfaction that they are all the same distance from the cylinder.

I may state here that the grinding machine used on the flats while off the card allows for the wear of the flat ends, as this grinder works with the wires of the flats pointing downward, thus the flat ends are supporting themselves from the same sides as they do while riding the flexible bend.

At this time an inspection of the chain is advised and its replacement, if necessary, should be made.

The wear of the chains will vary on one card as well as on different cards; therefore, it is likely that some of the flats will not be presented to the card in an exact parallel position, nor would they be presented to the grinder on the card in a parallel position.

Your contributor says that he is running 1⅛-inch cotton through the breaker, intermediate and finisher pickers, and, taking into consideration that the cotton is not in ideal shape when it reaches the card, he asks how often he should grind these cards. Also, he wishes to know whether 1⅛-inch cotton is harder to card than ⅞-inch cotton.

I will say that there is no hard and fast rule for the grinding of cards; even those running the same class and the same staple of cotton. The working conditions of one mill will vary from those of another mill. Also, the setting of the grinders will vary, as well as the length of time used in grinding. In other words, the carder must learn from experience the best procedure to follow in his own mill.

There are some carders who prefer frequent grinding with a light setting; some prefer less frequent grinding with a heavy setting. There are dangers in both. My suggestion is the striking of a happy medium between the two; this, by the way, to be learned by experience. Where the light setting is employed the danger is from merely polishing and topping the wire. The danger from heavy grinding is in hooking the wire; this hooked wire will injure the fibers.

The 1⅛-inch cotton is harder to card than ⅞-inch cotton because the longer-staple cotton must be handled more carefully; there is danger of breaking the stock if it is not carded more slowly than the shorter staple. Also, it is more difficult to draw these longer fibers parallel from their natural twisted state. The feed roll and doffer must be slower for this longer-staple cotton so that the cylinder does not have too much stock to work on and thus break the fibers in its carding action.

CONTRIBUTOR No. 5008.

Experiences with Cone Winding and High Speed Warping.

EDITOR COTTON:

Referring to the inquiry of "CONTRIBUTOR No. 6008" in regard to possible advantages of winders and high speed warpers over spoolers and low speed warpers. The contributor states that he is unable to see how an operator on the winders has any advantage over one on the old spoolers since each must go through the same motions. He states that he has to spool and warp 25,000 pounds of 30s a week, and wants to know wherein he would gain by putting in winders and high speed warpers.

As the writer sees it, the advantage of using the winders as against the spoolers is not so much a question of quantity produced per operative as it is the quality of the product, or the effect of the winding on the warping, slashing, and weaving operations that follow.

As to the pounds produced per operative on the spoolers as compared to the winders, the following taken from some recent production reports will give an idea of how the two compare in one mill:

SPOOLERS

Yarn No.	Spindles per Operative	Pounds per Operative per Week.
13	28	2680
30	40	1792
40	60	1493

From the above it will be seen that about 14 spooler hands will be needed to produce 25,000 pounds of 30s yarn in a 55-hour week.

WINDERS

Yarn No.	Spindles per Operative	Pounds per Operative per Week.
13	18	2595
30	25	1732
40	35	1620

Here again it will be seen that about 14 spooler or winder hands will be needed to produce 25,000 pounds per week.

The above figures are taken from the experience of one mill. It is not represented that they cannot be

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beaten. But it does seem to bring out the point that there is not likely to be a big difference in the number of operatives needed to put up 25,000 pounds of yarn whether spoolers or winders are used.

When we come to compare the production of the high and low speed warpers we find a very material difference in favor of the high speed. From production records at hand I see that one high speed warper will average about 96,000 yards per day as against 25,000 for one low speed warper. This is on 30s yarn.

This we see is a big advantage, all of which is not to be credited to the warpers. We should not consider the cost per pound at the winders merely as the costs arising in the winder room. There are other points to be considered. By use of the winders we are able to put the yarn on a cone and to use this cone at the warpers to great advantage.

One advantage of the cone is the fact that by its use we are able to keep the high speed warper in continuous service. At least we do not have to stop it for creeling. The cones fit into a creel that enables us to tie an end from a full cone to an end of a cone that is about to run empty, and thus keep the warper in operation at all times, as far as the creeling goes.

The yarn is pulled off the cones over end and there is no strain on the individual strands of yarn being fed into the high speed warper. This aids in getting even tensioning of each strand in the section beam, and in eliminating tight and loose warp ends. Uneven tensioning is encountered in the low speed warpers where each end must pull a spool, and necessarily be under varying degrees of tension.

The cone system eliminates one of the big evils of the spool system in that it does away with stale yarn and waste made when we use the spools. In the spooling system there is a certain amount of yarn left on the spools at the warpers and this accumulates knots and makes waste and stale yarn.

The over-end feed system used with the cones and high speed warpers gives an advantage over the spools and low speed warpers in that there is not as much tension on the yarn drawn from the cones, and more of the elasticity is left in the yarn than is the case where the strand of yarn is used to pull a spool. This advantage, however, may be lost at the slashers by using too much tension between the split rod and the loom beam, and so pulling the elasticity out of the yarn.

It has recently come to the writer's notice that the winders have an advantage in another respect. In a mill where both spoolers and winders are used it was decided to put the tenders on piece rates instead of paying by the day. This could be done in the case of the winders since the tender was winding onto empty cones each time. But it was found impractical to pay the spooler tenders by the spools, since partly empty spools coming back from the warper room did not contain the same amount of yarn on the piece every time. This condition might not be the same in all mills, but in this one we often run small sets of as little as 5,000 yards off the spools, and then send them back to be re-filled. A study of the matter led to abandoning the piece rate for the spoolers. The spinning room from which warp yarn is fed to these spoolers has several different size frames, and this pre-

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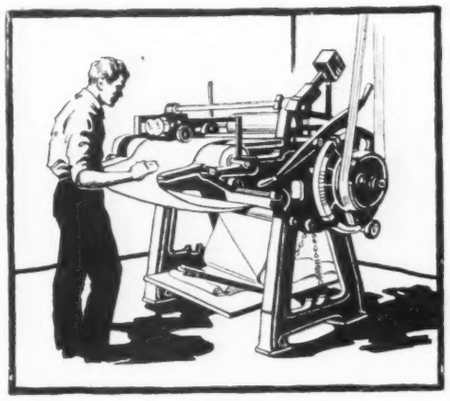

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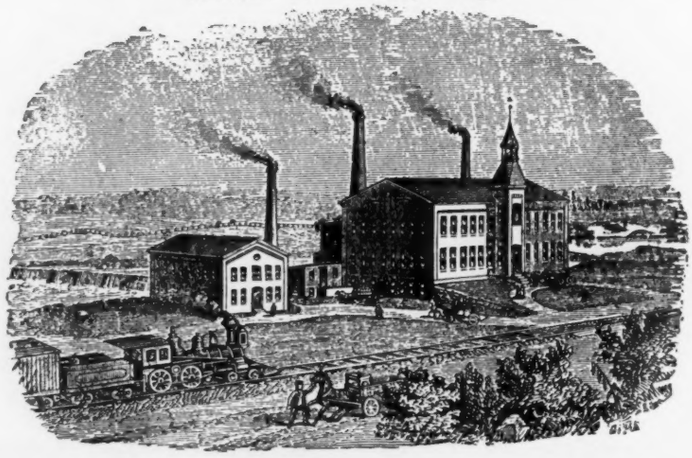

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vents the spoolers being paid by the box.

When we come to consider the cost of production in comparing the spoolers and winders we do not get enough advantage of the one over the other to call either a real advantage.

At the warping operation, however, we find quite a difference in the cost per pound. The following figures will give a good comparative cost. In both cases No. 30s warp is used.

LOW SPEED WARPING

Labor cost per pound	$ .0041
Overhead cost per pound	.0012
	.0053 Total warping

cost per pound for warp in cloth.

HIGH SPEED WARPING

Labor cost per pound	$ .0019
Overhead cost per pound	.0011
	.0030 Total warping

cost per pound for warp in cloth.

To this point we have not considered the effect of the two systems on the most important point—the effect on the cost per pound at the weaving operation. It is here that the advantage of the winders and high speed warpers is most pronounced. To bring out this point let us consider some figures.

We are making a certain piece of goods. It costs $.0092 to spool a pound of the 30s warp. It costs $.0030 to warp a pound of same. It costs $.1457 to weave a pound of the goods. Let us consider that by using the winders and high speed warpers we are able to make warps with better weaving qualities, and so are able to raise the weave room production from 88 per cent to 90 per cent on this piece of goods. The weave department labor and overhead burden per loom is $4.1032. The pounds produced on one loom in a week at 88 per cent are 28.16 and at 90 per cent production are 28.80.

$4.1032 ÷ 28.16 = $.1457 weave cost per pound at 88 per cent prod.

4.1032 ÷ 28.80 = $.1425 weave cost per pound at 90 per cent prod.

Here then we see a gain of ⅓ cent per pound of cloth brought about by use of the winders and high speed warpers. This together with the saving at the warpers, will give us reason to consider the question of replacement of old style spoolers and warpers with the new winders and high speed warpers.

CONTRIBUTOR No. 6020.

EDITOR COTTON:

I note the inquiry of one of your contributors with regard to the experiences of mills which have replaced slow speed warpers and spoolers with winders and high speed warpers. The conditions in our mill are probably different from those in any other mill. We have replaced about two-thirds of our slow speed warpers and spoolers with winders and high speed warpers. This has all been ball warping; we have very little skein warping.

We have found that the cost of winding yarn is practically the same as the cost of spooling. We have not found it possible to cut the spooling cost considerably. The cone will hold about three times as much

Replacement is practicable only when the new equipment will pay for itself within a reasonably short time by lowering production cost . . . and enables the manufacturer to make a fair profit and to set a fair selling price on his goods.

Kendall Mills*, Division of The Kendall Company, Thrift Plant, offers an example of such replacement. At one time it used 7 hand cleaners to clean its quills. Later, it greatly reduced its cleaning cost by installing a quill cleaning machine.

Still later, it replaced that machine by a Type K Quill Cleaner and reduced its cleaning cost an additional $1200.00 a year.

A number of other mills have saved money by replacing less efficient and more costly methods of quill cleaning with Type K machines. Some of these mills have made reports on what Type K Quill Cleaners have accomplished.

Copies of these reports have been placed in a loose-leaf book, "Type K Facts." It will be sent free to textile executives. Write for your copy.

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General Supply Co., Danielson, Conn., Representatives for N. Y., N. J., Pa., New England States and Canada.

Where the *"wait and see"* men go wrong—

By Col. Cotton

With evidence piled up on all sides to show that mill men of vision and action have made from $5,000 to $75,000 more a year by a single, easily made decision, how can you afford to let the "wait-and-see" men hold you back? "Wait until business picks up" is altogether unbusinesslike.

Waste and loss and expense are everywhere in mills equipped with obsolete or inadequate humidifying systems. These losses trickle through. They get by all the "wait-and-see" men. It takes the alert man, on the lookout for profit leaks, to find and plug those leaks.

Send for "Tours Through Textile Tangles". Read about the mill where profits went up $5000 a year by correcting the faults of an old humidifying system. Read about another mill where profits went up $75,000 a year by maintaining the correct amount of moisture in every room with Amco humidity control. Read about others all the way between—then put the damper on the "wait-and-see" men.

In his book "Tours Through Textile Tangles" the textile specialist, J. W. Cox, Jr., gives the facts of improved product and figures of increased earnings of 43 textile mills when their humidification systems were modernized. This book is free for the asking.

Our engineers' advice on how to cut out waste costs you nothing. Let them check up carefully on how your humidity affects labor, regain, speed and quality. Amco humidifiers *wash the air* many times every hour.

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yarn as the average spool, and the operative will not have to change the package as often; but it takes much longer to put on an empty cone than it does a spool, and this offsets the increase in the size of the package.

We made a considerable saving in creeling and warping. We were able to increase the yard per ball, as with the old system we were limited by the yards that we could put on a spool. We cut our warping cost approximately 42 per cent and our creeling cost about 47 per cent. We made a total saving on the investment of about 17 per cent. This does not include the extra floor space that we have gained and the saving in horsepower. We also improved the running of our work and increased the production of our dye house, beaming and slashing. This saving was due to our being able to run more yards to the ball.

CONTRIBUTOR No. 6016.

EDITOR COTTON:

I note the question of "CONTRIBUTOR No. 6008," who wants information as to winding and high speed warping as compared with old style spooling and slow speed warping. Inasmuch as I have had experience on both automatic spoolers and high speed warpers, and winding and high speed warpers, I am glad to give you some figures on both.

About three years ago, while at another mill, we changed from old style spoolers and warpers to automatic spoolers and warpers. The production ran about 30,000 pounds per week of 31s yarn.

We replaced fourteen spoolers and 16 warpers of the old style with two automatic spoolers and three high speed warpers. With the old equipment we had 14 spooler hands, two warper hands, three creel hands, one spool and beam hand and one yarn man. After changing over we ran the same room with four spooler hands, one warper hand, one creel hand, one yarn man, one tailing machine hand, and one extra hand to help creel and take off beams.

After increasing the pay of the automatic spooler hands several dollars over what they made on the old spoolers, this mill was able to cut the labor cost on spooling and warping 50 per cent. The saving in the spooling and warping was secondary to the saving in weaving. The weavers ran 25 to 116 per cent more looms, at the same time getting a higher production with fewer seconds.

On the automatic spoolers the spooler hand does not have to find the loose end on the cheese (spool) and has no knots to tie as this is done automatically by the spooler machine. All the spooler hand does is place the full bobbin of yarn in the bobbin holder, fasten the loose end on the bobbin where it can be picked up by the knotter, put on empty cheeses and take off the full cheeses. In doing so she can do two to three times as much work as she formerly did on the old spoolers.

On the warpers, twelve cheeses are put in or taken out at one time, and it is necessary to creel the warper for each beam. The beams hold about 30 per cent more yarn, however, than the old style warpers and can be creeled in ten to fifteen minutes.

In my present connection, we are running 28,000

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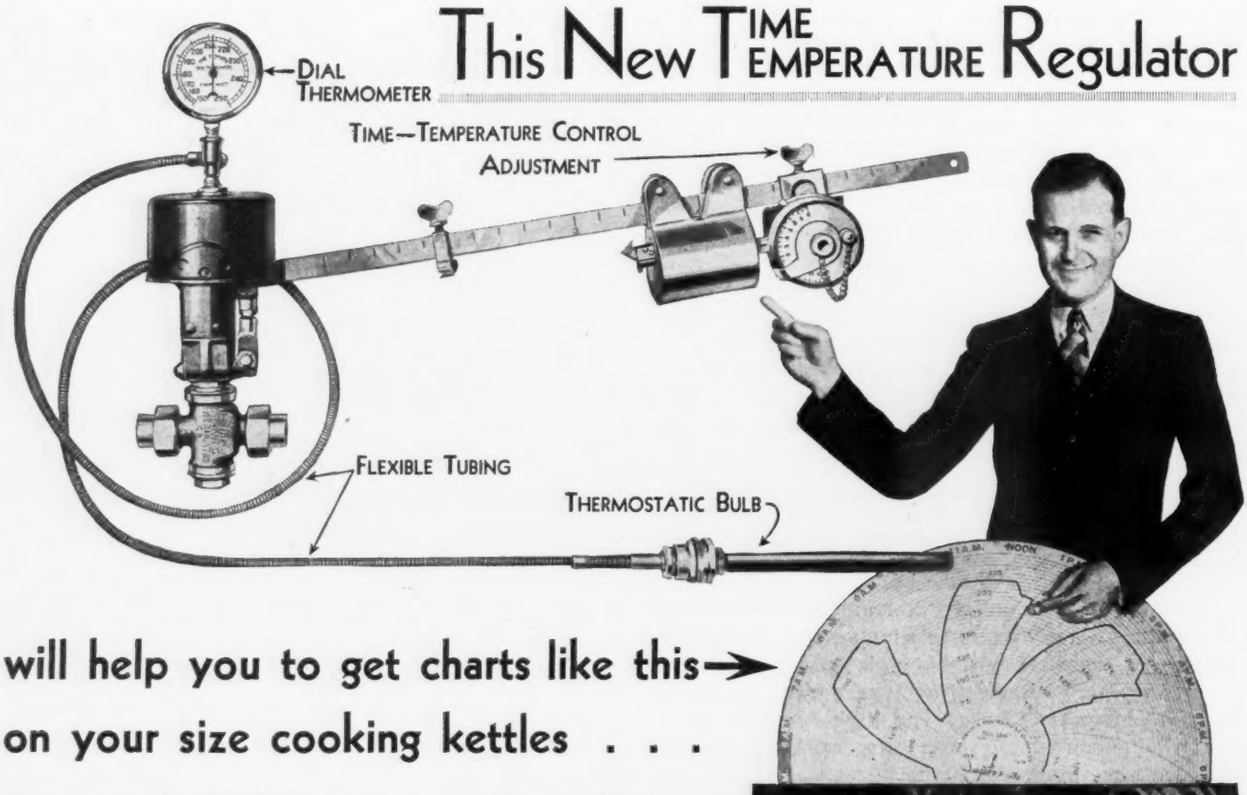
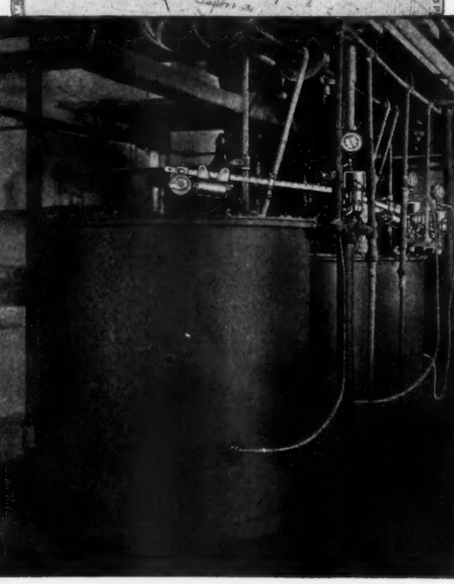


will help you to get charts like this → on your size cooking kettles . . .



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pounds of yarn a week—6800 pounds of 8s, 10700 pounds of 9s, and 10500 pounds of 13s. This production is run on three winders of 100 spindles each. We run these winders with 12 hands, which is the same number we used on the old style spoolers. The winder hand has to go through the same operation as if she were running spoolers. The winders run faster than the spoolers and a winder hand tends fewer spindles. The only saving we have been able to make on the winders, about 5 per cent, is due to more yarn on the bobbin now and the fact that we get more yarn on a cone than on a spool.

On the old style warpers we had one warper hand and three creel hands. At present we run with one warper hand and two creel hands. We get about 30 per cent more yarn on a beam and do not have to let the warper stand, except when changing from one yarn number to a different yarn number. To creel one of these warpers requires from 45 minutes to one hour and a half depending on whether or not the creel is single or double. Since putting in these winders and high speed warpers we have been able to reduce spooling and warping costs 25 per cent, but have not been able to reduce our weaving proportionately although we do have better running warps.

Either the automatic spooler and warper or the winders and high speed warpers will show a saving over the old style spoolers and warpers and also give better running work in the weave room.

CONTRIBUTOR No. 6021.

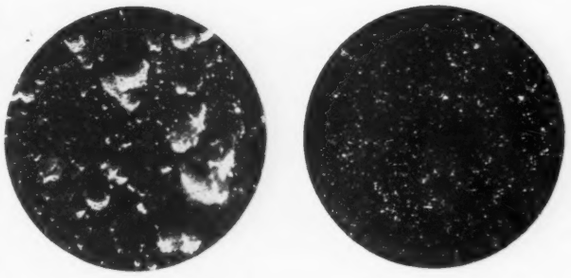
EDITOR COTTON:

This is in reply to the inquiry of "CONTRIBUTOR No. 6008" with regard to comparative cost and production using high speed winders for high speed warpers instead of old-style spoolers and slow speed warpers.

I am a little at a loss to give any exact comparative figures in regard to the cost of operating on our old style spoolers and warpers as compared to high speed warpers and winders which we now have. In our particular case our warp yarns range from 12s to 17s, about 50 per cent being 14s. Our production on 55 hours of warp yarn will average approximately 225,000 to 240,000 pounds, and the machinery we have for this is 18 winders, 110 spindles each, or 1,980 spindles running approximately 500 yards per minute, and 9 high speed warpers running approximately 350 yards per minute.

With reference to reduction in the number of operatives and labor cost on winders as compared to old style spoolers, we were able to reduce our cost about 10 per cent, but on the warpers we have reduced our cost approximately 60 per cent. There are other things, however, which enter into the advisability of changing over from old style spoolers to high speed winders in the way of increased efficiency in our weave room. When we first installed a few winders as an experiment we followed the yarn to the weave room and found that the warps made from yarn from the winders ran from 15 to 20 per cent better than the warps made from the old spoolers; that means, of course, that there was 15 to 20 per cent less loom stops attributable to warp causes.

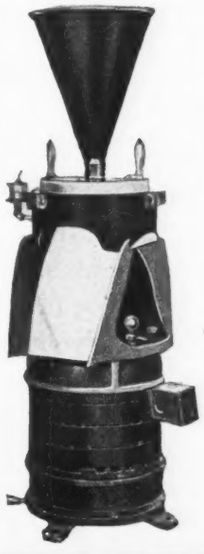
Here is a condition that accounts for many a dyeing failure!



Before Processing *After Processing*

EXPERIENCE has shown that most failures in textile dyeing are due to bad dispersion of the vat colors. The two micro-photographs above show the difference between an ordinary sample of pigment, and the same pigment after processing in the Premier Mill. Bad mixing in its initial manufacture, or long standing prior to use, will cause re-agglomeration. You know what sort of a result this is going to give in your textile dyeing.

Why continue to take a chance on this? The Premier Colloid Mill offers a simple and efficient method of color mixing. Positive adjustment to fine limits of the clearance between rotor and stator assures an output of paste that you can rely on to be of uniform consistency and that will not re-agglomerate.



It will pay you to investigate the Premier Colloid Mill and its application to the color mixing problems of the textile industry.

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PONTAMINE DIAZO BLUE 5GL produces green and bright shades of developed blue. It is especially suited for dyed grounds for white discharges on rayon and cotton piece goods.

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With reference to claims of more production per operative over ordinary spoolers, I will say that from our experience so far this difference is small; the only way we were able to reduce the cost of winding over spooling was by increasing the amount of spindles the winder hands were running, thereby decreasing machine efficiency and increasing operative efficiency.

If I remember correctly, when we first installed high speed winders the machine people figured on getting approximately 75 per cent machine production, but later, after many experiments, decided, and we have proven this to be a fact, that by decreasing machine production to about 60 per cent, which automatically increased operative production, we could lower our cost per pound.

CONTRIBUTOR No. 6013.

Keeping Out Slugs in White and Colored Work.

A carefully followed system of inspection and adequate cleaning is recommended.

EDITOR COTTON:

I would like to offer a few suggestions in connection with stopping bad work from the card room, and also on preventing dirty slugs and colored slugs in white work where a mill runs both white work and colors.

First, keep the white work and colors separated as much as possible; that is, keep the white work on one side of the room and the colors on the other side of the room.

We start in our opener room. We run colors and white in our openers, and when we finish colors we clean out all machines and blow them out with air and run about thirty pounds of white card strips through the opener and conveyor pipe. We also use the same system on the pickers, using the same card strips that we used in the opener room.

On the cards we do not allow any fanning or blowing off with air. We mop our cards with a mop made of slasher waste, and use air on Saturdays when the stock is all run out of the cards.

Coiler heads are cleaned out each morning before the cards are started up, and care is taken not to get any stripping waste on the sliver when the cards are stripped out.

On the drawing, the section man cleans the drawing rollers each day, and the frame hands pick the clearers each doff and clean up the frame while there are no cans under the heads, as I believe a lot of the dirty waste slugs come from the drawing.

On the slubbers we keep our clearers picked often and pick the flyers and spindles each doff. On speeders we use the same system, and also have the tops of the frames wiped off before the roving is laid up on the frame, and have the speeder tenders watch the roving creel for any slugs that got by. We do not allow any singling or doubling because a frame hand knows when one is made and can surely keep them out of the work.

"Harness down?"

"No, we use ORIGINAL and GENUINE "The Leather with the Hair on" Bondaron REG. U.S. PAT. OFF Harness Straps"

The old cry of "harness down" is very rarely heard when looms are equipped with Bondaron Harness Straps.

Made from specially tanned, tough, strong leather, Bondaron Harness Straps give extra long life—and in that long life are decided loom savings.

All Bondaron Textile Leathers give that long life satisfaction. Many, many mills keep their production steady and even by insisting upon getting the genuine Bondaron Loom Leathers.

Try them on your next order.

Other Bondaron Textile Leathers are:

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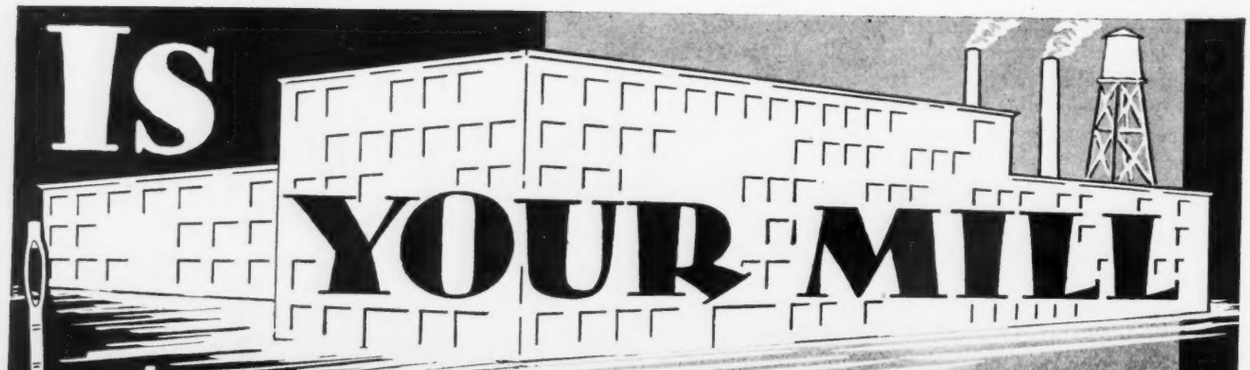
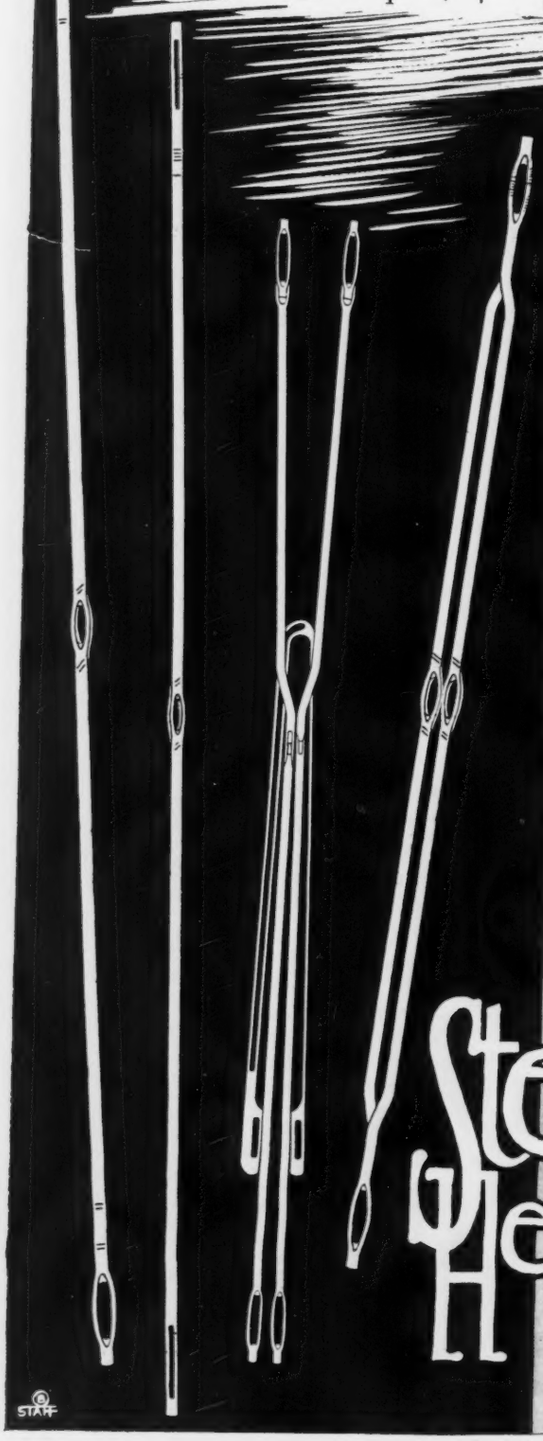


Equipped With FLAT STEEL HEDDLES?



Mill officials running over 65,000 looms equipped with FLAT STEEL HEDDLES have made the following statements regarding their preference for this type of harness.

1. "Prefer Flat Steel Heddle for our work, as same is very heavy and life of other harness too short."
2. "Cotton harness breaks too easily — Flat Steel Heddles last for years."
3. "They are easier to handle."
4. "We are gradually changing over to Steel Heddles —they make it possible to carry less inventory in harness and last longer."
5. "Prefer Flat Steel Heddle over cotton due to longer life—and they can be used on any sley goods by taking off or adding heddles."
6. "Prefer Flat Steel Heddles due to less breakage account uniformity of eye, lasting qualities, less friction allowing higher speeds, etc."

These are just a few of the complimentary statements we have received on Flat Steel Heddles.

Can you meet the competition of these mills without the benefits of FLAT STEEL HEDDLES?

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On the spinning we have the spinners pick out all of the slugs and colors that have got by, and we post these on a bulletin board, and the overseer checks up on the slugs each spinner has found daily and if any spinner has not found what he thinks she should, we have that spinner up, and the next day the same spinner gets her share. We do not pay any premiums for this, and roving taken out goes back to the card room and is separated out, and the frame hand gets back the ones he let get by, and pulls off the mixed or slugs and sends them back to the spinning. We also caution our spoolers and have them watch for slugs also.

We have found this system very good. But it must be checked daily, and we must *never let up.*

CONTRIBUTOR No. 5096.

Dividends

EDITOR COTTON:

Those who invest their money in a cotton mill expect it to pay them a regular dividend; likewise, those who invest their brains and manual labor expect a regular livelihood. Hence, those who do the actual work must do it in a way that will bring the greatest good to all concerned.

There are folks who think that owning a cotton mill is just like owning a gold mine, but those who believe this have never figured the income and the outgo of a cotton mill. For instance, take the mill that has a weekly production of 80,000 pounds, their payroll being based on that quantity; let the production fall to 70,000 pounds, and at the same time their payroll and incidental expenses are still about as much as they were when the production was 80,000 pounds. Say that the product was worth 40 cents per pound. 10,000 pounds lost, at 40 cents a pound would amount to a loss of $4,000 in one week. Does that sound like a gold mine? I should say not! However, if we reverse that and gain 10,000 pounds, then it would look more like a gold mine.

What I am trying to get at is this, and I am speaking to the man in the mill, when the boss calls on you for more production he does so because he wants to keep the production up to standard, and on the increase, for he knows that these dividends, and this livelihood for you, about which I have been talking, are all based upon that production. When he talks to you about the bad work you are making he is trying to take care of you. Every pound of seconds sold has to be sold at a cut price, and it is pretty hard to sell at that.

When he says put the oil in the oil holes, and not on the floor, he does so inasmuch as he knows that oil wasted cuts into both the dividends and your livelihood, and when he cautions you to be careful when putting on a new part and to see that it fits correctly, he does so because he knows that if it is not put on right it will soon be worn out and, you may be sure that he is looking out for the interests of all concerned.

When he tells you that the belt you have brought to him can be made to run longer, he is speaking from his knowledge that belting is one of the most

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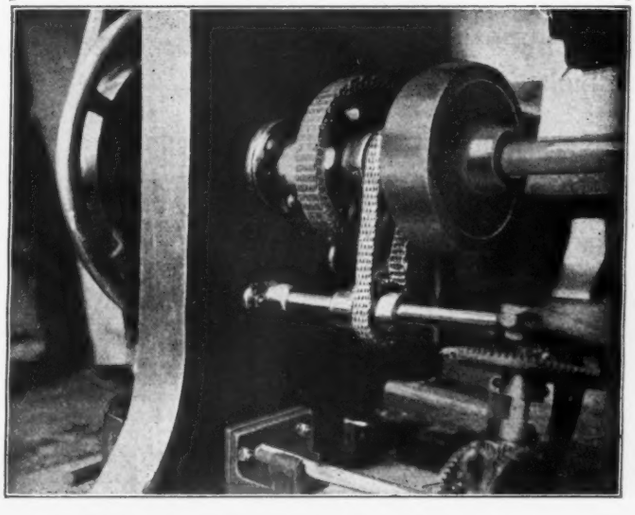

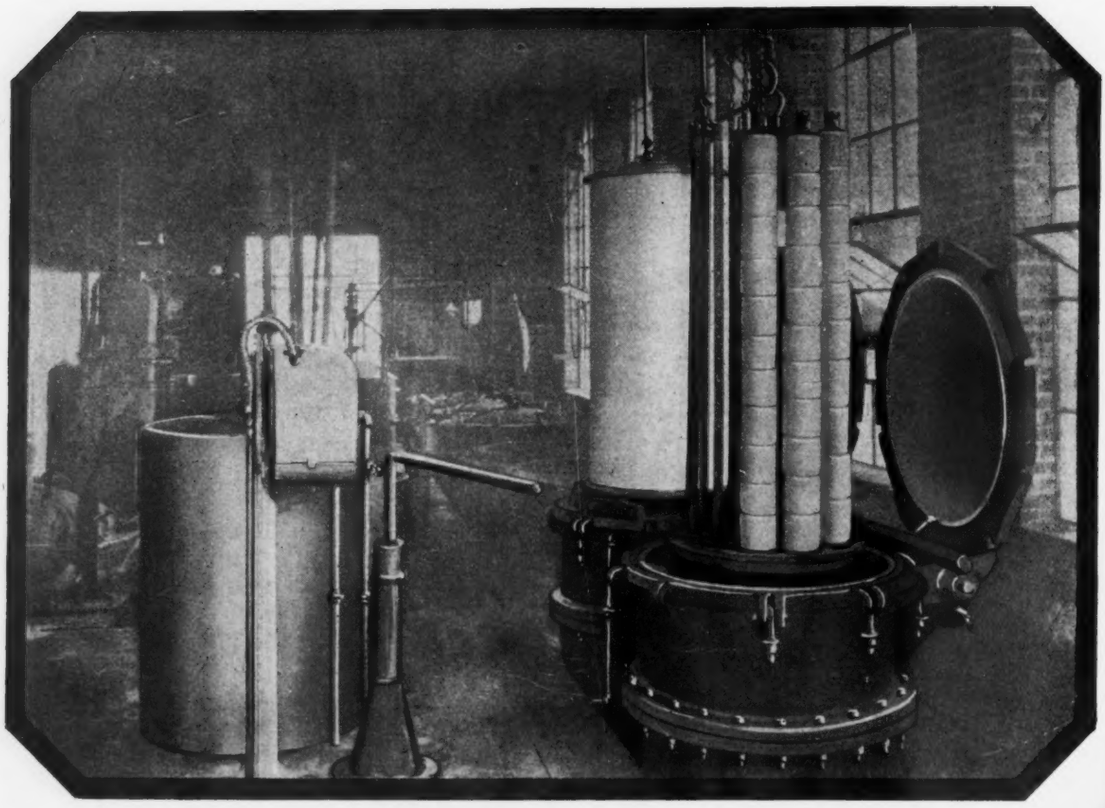

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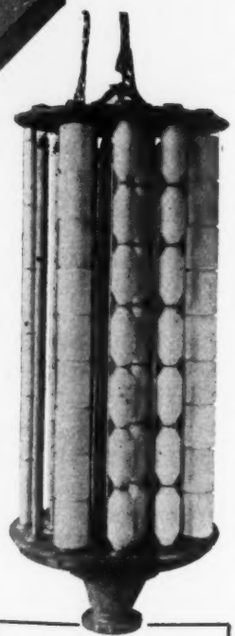
When you install a Gaston County unit, you can be sure of getting a thoroughly proved process as conceived by the greatest minds in the dyeing and drying field.

Write for information and list of users.



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Address all correspondence to our main office.

expensive things which a mill has to buy and will dig deep into the profits.

He calls your attention to the white waste on the floor for the reason that white waste can be run over and will bring a good price, but if it should have to be baled and sold as dirty sweepings, it would bring very little.

He warns you against getting the card fly and motes mixed together; he does so because he knows that card fly is worth more than motes, and he knows that if they get mixed and baled up together they will have to be sold as motes, thereby cutting deeper into your own livelihood. When he speaks to you about breaking so many roving sticks, as most of us call them, it is due to the fact that they cost a lot of money in the run of a year, and some of you would be surprised to know just how much, and when he insists that you find the fly pressers when they fly off your flyers it is because he knows that they can be put back on the flyers and will run as good as new, and by making the old ones hold out as long as possible he will be saving money for the company and helping you.

When he tells you to be careful when stripping cards and not let the stripping rolls hit the coiler head, he does so because of his knowledge that this will ruin the wires on the fillet, and stripper fillet costs a lot of money.

His admonition that you watch and not let the roving or empty bobbins fall off your frames into the flyers is because he knows this will break the bolsters, and bolsters, too, cost a lot of money and will take their toll of profits from all concerned.

He knows that bursted bobbins; carelessness in brushing down the top of the house, thereby hitting electric light bulbs and breaking them; spinning travelers thrown on the floor—one of the most expensive things bought around a mill—and many other forms of waste, cut down on the profits of the mill and react unfavorably on both the investor and the wage earner.

The writer could tell you of a million other things that would cut down on the profits, but he has said enough to show you that the overseer is your friend, that is, if he tells you about these things. If he has not told you about them he is not your friend, because he does not care whether you or the stockholders get anything out of it. However, such an overseer will not get his long, for the management will soon get wise to him and he will have to move on.

And now, to those of you who believe that owning a cotton mill is equal to owning a gold mine, I want to say that it is not, and never will be, not unless we improve a lot and cut out this awful waste which costs the mills so much, and, as I have tried to show you, also costs the wage earner. It causes the mills to run short time when orders fail to come in, but if they had the money that had been wasted, by the writer, and by you, they could have stocked all of their warehouses with their products until times got better, and it would never have affected the dividends of the stockholders nor our own livelihood.

J. T. D. (MISS.)

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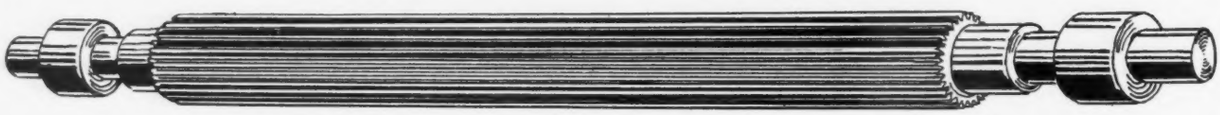
MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month



Meet the
"High Cost of Rolls" Problem
with this Unusual Repair Service

The saving you can make by using this company's unusual re-fluting service will amount up to a nice sum in a short time.

The special built and patented machines owned exclusively by this company, enable us to re-raise and re-size the flutes back to the original diameter of a new roll.

We can re-flute your old rolls and install new necks at a much lower price than the cost of new rolls.

Many leading textile mills are now turning over to us, all of their steel roller work. Most of them started by sending us a few badly worn rolls.

We invite you also to send us the worst roll you can find in your mill, and see for yourself the quality of our re-fluting and re-necking jobs—or write for information and prices.

Gastonia repair service is unequalled on:

STEEL ROLLS
FLYERS
SPINDLES

GASTONIA ROLLER, FLYER & SPINDLE CO.
GASTONIA, N. C.

More About Cockled Yarn.

It is not too late for you to contribute your opinions as to the causes of cockled yarn. Let us hear from you!

EDITOR COTTON:

In a recent number, "CONTRIBUTOR NO. 4990" asked the following questions: What actually takes place when cockled yarn is made on a spinning frame? Why the little soft lump, without twist, which will strike out when the last bit of tension is applied to the thread? He said he wanted a broader answer than the mere statement that the rolls are set too close.

I have encountered three conditions which have produced cockled yarn.

1. *Rolls set too close.* Cockled yarn can be made with too close roll settings even when a light self-weighted middle top roll is used, if the weight of that roll is more than say 1,500 grains and the fibers cannot slip freely. In this discussion, however, the usual weighted middle top roll is considered.

"CONTRIBUTOR NO. 4990" asks for the cause behind the cause of cockled yarn. Where rolls are set too close, the long fibers in the roving are held by the middle rolls while the front rolls slip over them, the short fibers in the roving being drawn through as usual. To my mind, this slipping of the rolls over the long fibers, even though it takes place for only an instant, stretches the long fibers to their full length so that when they are released by the middle rolls they spring to the front rolls and go through in coils or cockles. Naturally some short fiber would be caught up with these coils, increasing the size of the lump.

2. *Grooved or creased front top rolls.* Here the action on the fiber seems just the reverse as when the rolls are set too close. When the roving traverse brings the roving to that place on the front top roll where a groove or crease has been made by a hard end or lap-up, the front top roll slides over the longer fibers held most securely in the body of the roving just in front of the bite of the middle rolls, so that a curling action results with some of the fibers curling up or back along the roving. This comes through as a poorly-drafted place or lump in the roving.

3. *Low speeds.* Only a man who has worked fairly long cotton in a mill driven by inadequate water-power can appreciate fully how much constant speed means to the uniformity of his yarn. I have had the experience of slow speeds caused by low water and high water, by leaves on the racks, etc., etc. With 1 3/16-inch carded stock, spinning 40s, it was found inadvisable to let the front roll speed get below 95, with 118 r.p.m. as the normal speed. The cockles caused by low speed do not show up as prominently as the lumps caused by too close roll settings and grooved rolls, but rather a semi-cockled condition results, with large, weak places at irregular intervals. Since the fibers, in drafting, are straightened largely by friction with each other, and as the straightening force is proportional to the speed with which the fibers are drawn over each other, it is evident the low speed leaves the fibers in a somewhat wrinkled condition, and where any number of long fibers are present which require correct drafting conditions for their parallelization, the semi-lump is bound to develop.

SPINNA CALF

outwears other top roll materials

Because of the Special tannage and treatment which prevents roughing and withstands the hard ends, it will not split and prevents hollowing out. Requests for samples and information should be directed to:

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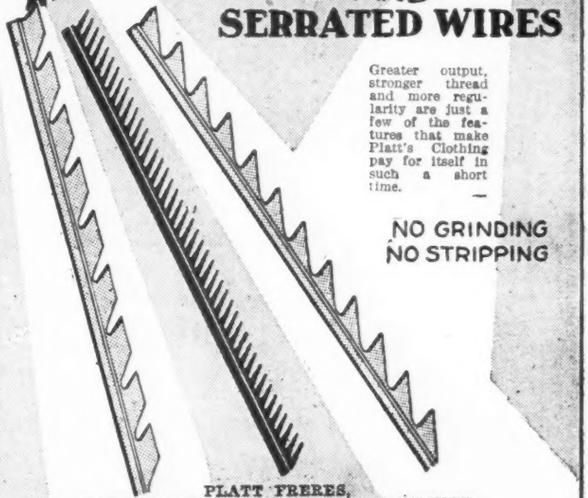
PLATT'S
METALLIC CARD CLOTHING AND SERRATED WIRES



Greater output, stronger thread and more regularity are just a few of the features that make Platt's Clothing pay for itself in such a short time.

NO GRINDING
NO STRIPPING

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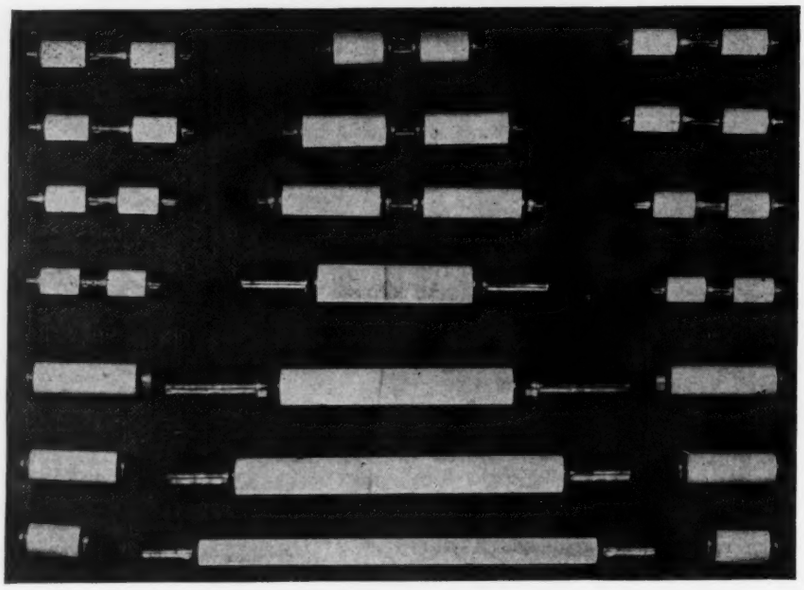
BOULEVARD DE LYON, ROUBAIX, FRANCE
Platt's Metallic Card Clothing Co.
P. O. BOX 407, LEXINGTON, N. C.
J. W. & H. Platt, Byron Works, Bouverie Rd., Harrow, England
Other Continental Branches in ROUEN, GHENT, BALE, MULHOUSE BARCELONA, TORINO, Etc.



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Even felt cloths can stand out in their field, as is proven by the unanimous approval of "Philadelphia" throughout the textile industry.

Roller Cloths of the correct cushion and uniformity.

Clearer Cloths with thick strong nap that cannot pull out. Uniform length that clears rolls entirely of short fibre.

Slasher Cloths with enough cushion and porosity to thoroughly force sizing into yarn.

Philadelphia specializes in Stamping Blankets, Palmer Blankets for Sanforizing and Lapping Cloth for Printing.

Our Southern Sales Manager, Clarence B. Seal, will gladly assist you on felt cloth problems. Address inquiries to Philadelphia.

PHILADELPHIA FELT COMPANY
FRANKFORD, PHILADELPHIA, PA.

Philadelphia *Felt Cloths*

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Brushes that do not shirk

Gastonia Brushes are made by specialists who know how to put service into them for textile mill purposes. They produce efficiency and economy that is rarely seen in textile brushes. Write for information.

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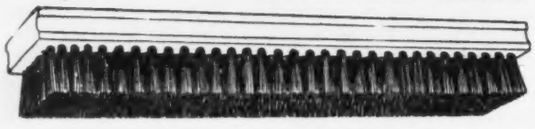
GASTONIA Brushes



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AUTOMATIC SPOOLERS
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MANUFACTURERS OF TEXTILE MACHINERY PARTS
Cut Gears—Cast Tooth Gears
Parts for Kitson Pickers, Nasmith Combers, Whitin Combers. General Textile Repairs.

GASTONIA, NORTH CAROLINA

PATENTS

PAUL B. EATON
Registered Patent Attorney, 1408-C, Johnston Bldg.
CHARLOTTE, NORTH CAROLINA
A former member of the Examining Corps United States Patent Office
WASHINGTON OFFICE: 941 MUNSEY BLDG.

Cockling, then, is caused by faulty drafting conditions, which result in leaving numbers of the fibers in a coiled, not paralleled strand. As such a heavy place in the yarn resists the insertion of twist, and as twist could hardly be inserted into coiled fibers, the twist runs to the smaller or lighter places in the yarn, following the line of least resistance. Without twist, the cockled places are easily broken, as the fibers straighten out when tension is applied.

CONTRIBUTOR No. 5039.

A Discussion of Cotton Classing

EDITOR COTTON:

Not having seen anything recently in "HOW OTHER MEN MANAGE" pertaining to cotton classing, I would like to write a few lines about this branch of the mill and the system which we employ at our plant.

As soon as the cotton arrives at the mill it is weighed and a good size sample drawn from each side of the bale. A tag with the following data is tied on each bale: Invoice number, mark, bale number and weight; another tag with the same data on it is placed in the samples.

After the cotton has been weighed and samples drawn the samples are brought to the classing room and classed for grade, staple, color, etc.

The cotton classer keeps a record of each bale on reports that show: Invoice number, mark, number of bales, grade and broker.

Any bales that are found not to equal the type bought on are rejected and samples sent to the broker along with a classification sheet which gives: Broker's name, grade, type, mark, bale number, weight, compress number, classification and disposition.

Red tags marked Rejected are placed on all bales that are found not to be up to standard. Any bales that are found to be better than the type bought on are marked up and used for our finer counts or sold to other mills. Blue tags marked Transfer are used on these bales.

Forty bales are delivered to the opening room on an order issued by the classer. The cotton is opened by the boss picker man who checks the bale marks and number with the mixing order and lays the bales around the bale breaker, having first a Middling bale, then a Strict Middling, etc.

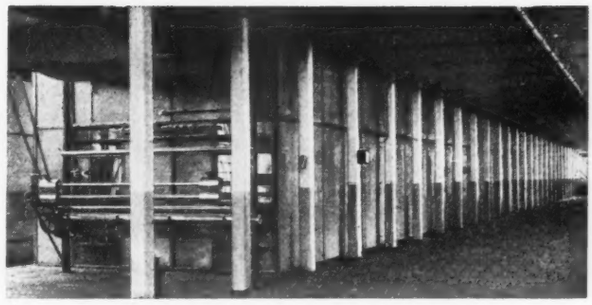
When all the bales are opened the mixing order and bale tags are returned to the classer who checks bales off his reports, and the date used.

We use ten marks for a mixing, and when the cotton is opened a layer or two is used from each bale at a time. Before any cotton is put through the bale breaker, the overseer of carding also staples each bale thereby giving us a double check.

We also use a color system which works out very well. Our 1⅛-inch stock is called Q stock and is marked green from the pickers to the looms; our 1 5/16-inch cotton is called W stock and marked pink. At any time while going through the different departments it is very easy to tell what stock is being run by looking at the color tag on the frame.

I would like to hear what systems other men have for handling their cotton.

CONTRIBUTOR No. 6027.



"Hurricane" LOOP DRYER

Handles Variety of Fabrics Efficiently

Quick Drying—Moderate Temperatures—No Tension

The illustration shows a Loop Dryer for floor covering, nearly 200 ft. long, one of the largest ever built.

Other "Hurricane" Loop Dryers are especially adapted to crepes, georgettes, plush, velvet, toweling, etc. Extensively used for Silk, Rayon, Cotton and Wool Fabrics. Built also for Drying and Shrinking.

"Hurricane" VACUUM EXTRACTOR

This machine, for extracting moisture from cloth at high speed and in full open width, can be operated in range with the "Hurricane" Loop Dryer or other Continuous Equipment.

RAW STOCK DRYERS

New Design - - Greater Capacity.
Lower Operating Costs.

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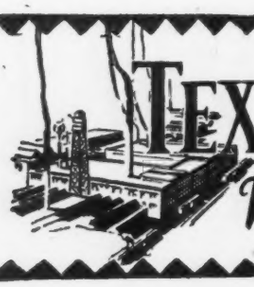
THE PHILADELPHIA DRYING MACHINERY CO.
3351 Stokley Street, Philadelphia, Pa.
DRYERS for ALL Textiles from Raw Stock to Finished Fabrics

BARBER TAPES ARE DEPENDABLE

That's why so many mills prefer them. Mill men who "know" always specify BARBER TAPE because they know they're getting the best.

BARBER MANUFACTURING CO.
Charlotte, N. C.

BARBER
SPINNING AND TWISTING TAPES



TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

1. Cotton Picking, Carding and Spinning—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling By Whitin Machine Works, Whitinsville, Mass.

2. Pepperell Equipment—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

8. "Textile Brushes"—10 page booklet illustrating brushes for cleaning every part of mill. By Gastonia Brush Co., Gastonia, N. C.

10. Leathers, Textile—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

12-A—Instruction Manual for Type K Bobbin Cleaner. Also **Instruction Manual for Utsman Bobbin Cleaner**—two separate booklets describing adjustments of machines outlined, and also describing effect of bobbin shapes upon the cleaning process. These booklets intended for users of machines outlined. Applicants should designate which booklet is desired. By the Terrell Machine Company, Charlotte, N. C.

12-B—Instruction Manual for the Termaco Roving Bobbin Cleaner—booklet in four sections on adjustment of machine; on how to use machine to best advantage in reducing waste and saving labor; parts catalog; description of new attachments which can be applied to earlier models of the machine. By the Terrell Machine Company, Charlotte, N. C.

13-A—Equipping Modern Textile Plants—Booklet, 35 pages, illustrated. Describes value of Monel Metal equipment in textile plants and presents reports from mill owners and operators on actual experiences; equipment, descriptions, etc. Also Dyed in the Truth—Reprints of advertisements of special interest to textile dyers. International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

15. The Powers System of Thermostatic Control—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

17. Arcy—12 page booklet on getting most value from starch in warp sizing and cloth finishing. By Drake Corporation, Norfolk, Va.

18. Popular Industrial Chemistry—162-page handbook for dyers, chemists, finishers, purchasing agents. By Kali Manufacturing Company, 1404 No. Front St., Philadelphia, Pa.

19. Quaker City Chemical Co.—48-page booklet containing useful information, tables, formulae, on dyeing, bleaching and finishing all textiles. Issued by above company, 2786 North Broad St., Philadelphia, Pa.

20. Bleaching, Dyeing, Finishing and Printing Textile Goods—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co, 748 Rice St., Atlanta, Ga.

22. Tragasol and Its Uses—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

25—"Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

27. The Seven Factors of Belting Economy—Booklet, 112 pages, illustrated, containing authoritative information on the economical layout, care and operation of belt drives. Chas. A. Schieren Company, 88 Ferry Street, New York City.

28. Akron Belting.—Practical rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

31. Canvas Baskets and Trucks—Doff boxes, trucks and for all textile uses. By Rockweave Mills, LaGrange, Ga.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machine with general information on subject of full fashioned knitting.)

41. Budget Control—40-page booklet showing how each part of business budget should be prepared and principles of its effective operation together with a summary of benefits. By Ernst & Ernst, accountants, 27 Cedar Street, New York, N. Y. (This company also has available booklets on Standard Costs, Business Control Through Analysis, The Better Wage, Factors to Consider in Working Out Mergers.)

42. Textiles and the Telephone Typewriter—6 page booklet on telephone typewriter service for communication between mills and selling houses. By American Tel and Tel. Co., Long Lines Department, Atlanta, Ga.

44. Points of Interest in and Around Atlanta—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

45. Fidelity Universal Ribbers—A forty-eight page booklet showing the advantages and many styles of ribbed fabric and describing in detail and illustrating the latest developments in ribbers. Sent free on request by Fidelity Machine Co., 3908 Frankford Ave., Philadelphia, Pa.

46. Mundet's New Black Book—Including specifications for the installation of cork-pipe covering under various conditions, telling how thick the insulation should be, listing the sundries that are needed with cork pipe covering—showing what to do when pipes are close together, explaining how to order, prices, etc. Copy sent free to anyone interested in cork pipe insulation. L. Mundet and Son, Inc., 450—Seventh Ave., New York, N. Y.

50. The Effect of Belt Tension on the Cost of Belting—a 12-page booklet, giving a non-technical explanation of belt tensions, the coefficient of friction of various kinds of belts, the effect of belt tension on belt costs, and the proper care of belting to assure long life and low costs. Sent free on request. Chas. A. Schieren Co., 80 Ferry St., New York, N. Y.

52. The Lincoln Twin Disc Floor Machine—showing the many advantages of clean, sanitary floors, the saving of time and labor through using floor cleaning machines and describing in detail the various models of Lincoln floor machines. Lincoln-Schluster Floor Machinery Co., 213 W. Grand Ave., Chicago, Ill.

54. Shipper's Handy Helper—A forty-eight page booklet giving valuable information on shipping problems, including suggestions on packing, marking, numbering and invoicing shipments and describing the principal items generally used in shipping departments. Southern Shippers Supply Co., 118 Courtland St., S.E., Atlanta, Ga.

55. Interpretation of Analysis for the Layman—An eight page booklet explaining what the various terms used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

56. Technical Service Data—giving information on processes of textile manufacture in the use of oils, softeners, etc. National Oil Products Co., Harrison, N. J.

57. Reducing Textile Costs and Troubles telling all about the benefits of water treatment. Permutit Co., 440 Fourth Ave., New York, N. Y.

61. Belt User's Book—76-page book with suggestions, rules, tables and charts helpful in the purchasing, application, use and care of belting. J. E Rhoads and Son, 35 North 6th Street, Philadelphia, Pa.

62. Rubber Products for the Textile Industry—a 40-page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts showing horsepower rating pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan Inc., Passaic, N. J.

63. S-W Paint Standardization Plan—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., 40 East 34th St., New York, N. Y.

65. Why Cooper Hewitt Light is Better Than Daylight—a 16-page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

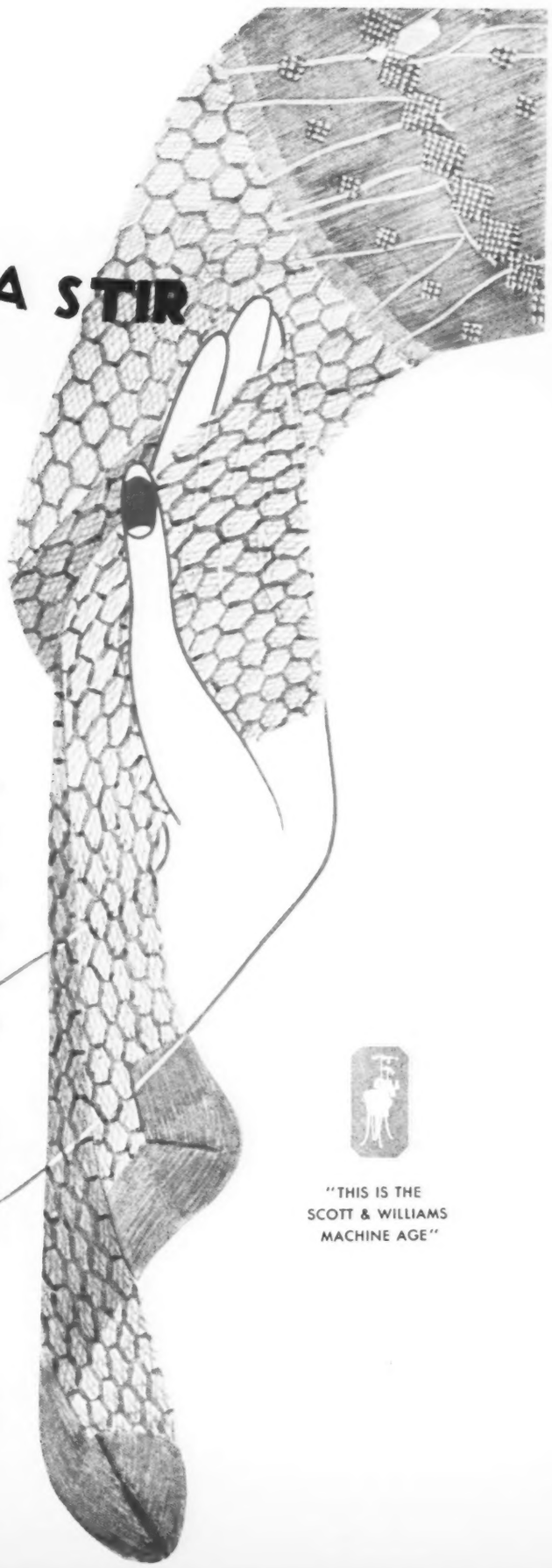
66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176, describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

67. Specification and Size book, I-31, convenient reference book giving complete information and prices on Rockwood Short-Center Drive for textile machines. Rockwood Manufacturing Company, Indianapolis, Indiana.

68. Rockwood Pulley Specifications, a reference booklet giving complete specifications of 2,540 stock sizes of pulleys. Rockwood Manufacturing Company, Indianapolis, Indiana.

KNITTING SECTION

IT'S CAUSING A STIR



Lace is the word. Alert hosiery manufacturers are watching this growing vogue for all-over lace in simple and elaborate designs. And with the Model "K" they are ready to meet it. For fancy top, all lace hosiery that is style right and fast selling, this 25-step spiral machine takes the honors.

We show a lace stocking (design patent applied for) made by Hanes Associated Mills on the new Model "K". And note: this exquisite stocking has the exclusive "Gussetoe".

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

Established 1865

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366 BROADWAY NEW YORK, N. Y.

WITH THE NEW ATTACHMENT 53

Color within a color wrap . . . the latest development for your Standard Model H machines! For panels, clocks and all-over patterns. For half hose, and children's, infants' or boys' golf hose.

Attachment 53 is easily applied at your mill to a Model H now equipped with attachments 31, 38, 39, 41, 42, 43, 44 or 48. A plain machine should be returned to our shop, where we will apply one of the above attachments plus this new No. 53. Ask us for prices and samples.

IMPORTANT
Machines with this new Attachment 53 can also make all-over solid or patterned *mesh hose.*

Established 1872

STANDARD TRUMP

STANDARD-TRUMP BROS. MACHINE CO.

366 BROADWAY • NEW YORK, N. Y.

Modernization in the Knitting Industry

A PRACTICAL and comprehensive definition of the term "modernization" in its application to manufacture of probably any given major article of commerce is "to effect means for its production at the lowest possible cost consistent with public appraisal of quality, and its marketing at a price that will yield an adequate profit for the producer and the merchant who passes it to the consuming public."

This is, in brief, a hosiery manufacturer's conception of what is implied when modern equipment in his particular line of industry is referred to. He maintains that a typical example of modernization in full-fashioned hosiery equipment is the passing of 39-gauge machines, as a commercial standard ten years ago, to 42-gauge and later to 45-gauge, from which to obtain volume production of stockings best adapted to the demands of the public, for volume in a given class. This, he says, is perhaps the first aim in striving for that which is the incentive for establishing an industrial enterprise and maintaining it along modern lines—profit.

Style, not necessity, may be recognized as the mother of invention in the field of mechanics in the production of women's full-fashioned stockings. Style suggests the nature of the changes to be made in machinery for having it produce what has been decreed as a coming vogue. These changes, effected and placed at the disposal of the users of the machines, constitutes just another step in progress, which after all is but another way of expressing modernization.

Style, as must be apparent to the progressive manufacturer of almost any article for wear, travels in cycles. What was recognized as modern in its day became, in course of time, too commonplace to receive more than passing attention from any element in manufacture or distribution, but may be modern at present. For example, bouclet cloth was a staple, popular even after novelty had worn off, but for a time not much heard of. Yarns for the manufacture of knitted bouclet fabric are one of the more profitable products of certain spinners who recognized that a new application of an old principle modernized bouclet, as among the profitable products of cotton, as well as of other fabrics. The spinning of knob yarn is a modern way of producing astrakhan fabric.

In many respects the archaic in mechanics may figure conspicuously in the modern full-fashioned hosiery plant—modern from the viewpoint of producing at minimum cost, in maximum volume, a hosiery of gauge that is attractive to a considerable consuming element, from, at least, its low price in relation to consumer-appraised intrinsic value.

Actual results may be accepted as a measure of the wisdom of full-fashioned hosiery plant modernization in the past few years. There were specifically two classes of mills outstanding for pressure on production facilities for meeting demand in the last quarter especially of 1931. One class was selling capacity production of lace-mesh hosiery, largely the product of 45-gauge machines. This was one group that could point to modern equipment as the explanation for demand for goods and, in sequence, expert labor, at a time when there was need for all the employment that could be provided for diminishing the pressure for relief from destitution incident to unemployment.

The other specific class of manufacturers giving employment to two operatives where, in many mills, only one was required, were those featuring price, claiming as justification, that their product was representative of good dollar value as measured in terms of fractions of dollars. This group was employing machines of a gauge that was regarded modern ten years ago, sharply declining in favor five years later, and no longer being offered by machine builders.

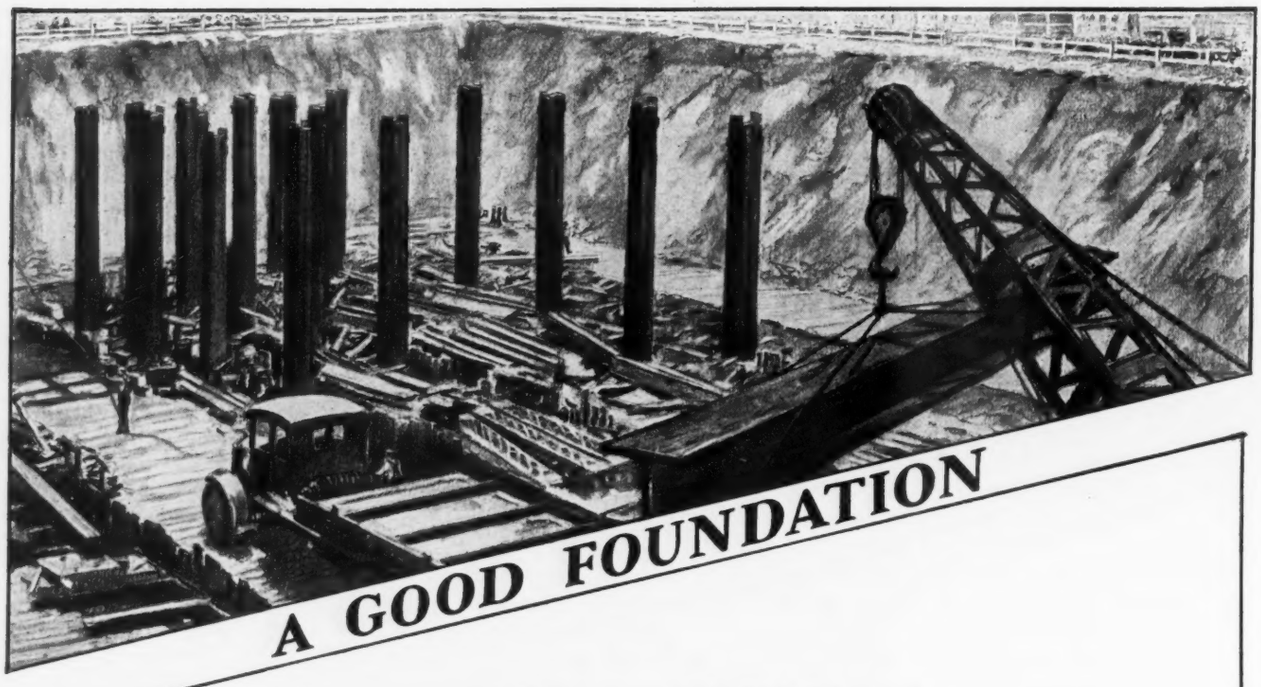
Machines of 39-gauge may be said to have succumbed to the march of modernization, yet, in much limited numbers, are available in the sense they can be made to produce profitably what is acceptable to a large part of the hosiery trade. They represented 23 per cent of the output of a leading domestic full-fashioned hosiery machine-manufacturing corporation in 1925, and but one per cent in 1928, since when none has been built by this company and few, if any, by any other concern.

The owner of machines of obsolete gauge who is operating them profitably is deferring the modernization of his plant, because he is fortunate in their possession at a time when they can be used only for meeting a price condition under unusual economic conditions.

Trend to Plant Modernization Seen in Gauge and New Construction in 1931.

Using the machine builders' figures for indicating the trend in other gauges, the production of 42-gauge in 1925 has decreased steadily while that of 45-gauge has as steadily increased, from two per cent of the total production in 1925 to 57 per cent in 1930. A preference for the finer gauge was indicated in the sensationally low prices which extensively advertised coarser gauge machines fetched at the auction sales of equipment by receivers of several manufacturers.

The trend in 1931 as indicated by manufacturers modernizing their plants was to 45-gauge machines with the latest attachments for producing practically every type of construction to be gotten from full-fashioned equipment. The lace or fancy hem of the stockings apparently was the forerunner of the mesh lace for the entire leg. Thus 1931 probably witnessed the longest stride made in years in the modernization of construction for women's hosiery. Lace stockings were manufactured in 1898 in

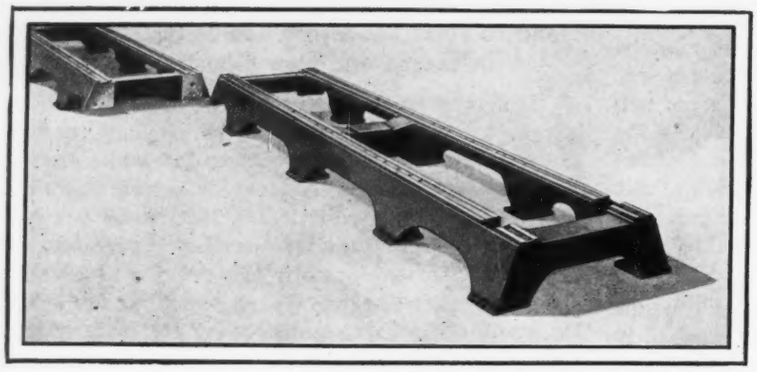


A GOOD FOUNDATION

The new Wildman Full-Fashioned Hosiery Machine has been built *right,* from the ground up. The *heavy base* upon which the legs rest is one of the principal factors in the elimination of vibration and its accompanying dangers.

Write for further information

**Wildman Mfg. Co., Full Fashioned Division,
Norristown, Pa.**



WILDMAN
THE WORLD'S STANDARD

WILDMAN

FULL-FASHIONED HOSIERY MACHINE

the first full-fashioned hosiery mill to be established in Pennsylvania—a mill which, it is maintained in the trade in general, now is producing women's lowest price silk full-fashioned hosiery manufactured in Pennsylvania—capitalizing possession of the archaic in machinery for modernizing price—in other words, adapting cost of production to the times in which we live.

Lace stockings produced by the Jacquard process were commercially modern for but a short time. Made now by that process, they would be unattractive as to price, the modern knitting machine representing an evolution in applying a new process of construction for lace fabric, eliminates the price factor as an objection, and as lace and mesh stockings were accorded hearty approval but last year, by the consuming public, and are indicated as the vogue for 1932, they may be credited to modern plants as creations which are promising of taking their place among staples in new cycle.

Adapt Equipment to More Frequent Style Changes Rather than for Mere Price, through High Speed.

Modernization of hosiery plants seems very certain of being more rapid—or in any event receiving more attention—than in recent years, for it will have to follow in the wake of radical changes in marketing the product of the plants. Time was when a given style ran for an entire calendar season—when distributors knew of but two buying periods in a year. During that time plant modernization was confined largely to increasing the number of sections per full-fashioned frame and to gauge. The trade always got along as well as in the preceding year, until keener competition competition called for not only longer frames, but a speeding up, whereby, eventually, the modern machine was producing 50 per cent more dozens of hosiery in a given time than was obtainable from its predecessor which not so long ago ceased to be modern. The penalty was over-expansion—an excess of production of hosiery and a deficit in profits from manufacture.

Photo, courtesy Robert & Co., Inc.

The full-fashioned plant of the Davenport Hosiery Mills, Chattanooga, Tenn., showing fourth story recently added to provide for consolidation of all processes in one building, and beter arrangement of equipment . . . . . .

With the lesson from over-expansion still a bitter memory, manufacturers in recent months paid less heed to high speed operation than to adaptation of equipment to an era of more frequent style changes, giving more thought to character of product rather than price for getting under that of a rival. It was the policy of one manufacturer of coarse gauge stockings to make a price ten cents a dozen below that of his more aggressive competitor. "No matter what his price may be, ours is to be ten cents a dozen less," was his ultimatum to his superintendent. With the manufacturer operating a plant modernized to the last hour it is an aim, "No matter what he makes, we shall make something better for his price."

There is a notion among some that quality does not pay as substantial dividends as sub-standard goods at sub-market prices; that the secret of successful operating of a hosiery mill is low overhead. It is the boast of the managing executive of a mill corporation that he has a lower overhead cost than any other American full-fashioned hosiery plant, this by reason of having mass production from equipment bought at distress prices and plant maintenance by which loss of time by stoppage for repairs is reduced to a minimum.

Plant modernization obviously contemplates more than low overhead. Low operating cost was in the mind of the engineer who designed the later machines, realizing as he must that unless his creation paid dividends it never could win distinction as representing the modern. Once accepted by the consuming public, the modern pays dividends, while the commonplace product of the equipment which has earned a claim to obsolescence is receding in favor. As the modern of today is a staple of tomorrow, and as the days, in this respect, are becoming shorter, it behooves the manufacturer determined to keep in step with progress, to keep his ear to the ground and his binoculars trained on the horizon for signs of the next turn in the cycle of events industrially.

Is the pace coming to be too swift for the old school mill executive? ask those closely observant of the recent past and mindful of the likelihood of still more advances in the hosiery trades. Executives in this era of upheaval must be more than executives, it is argued, since even some of the giant mill managements manifest a lamentable inability to vision the immediate future and are left to depend on the counsel of a new school of modernists. It is realized the world demands "something new", and there is seen a pathetic groping for it, contemplated plant modernization calling for closer contact, through the stores, with the modern thought of the shopping public. There is modernization in merchandising no less than in adapting plants to the production of what does, or will appeal.

That there will be repetitions of the experiences of numbers of manufacturers of seamless hosiery who overstayed their entrance into the full-fashioned field, will not be doubted. Mill executives who might

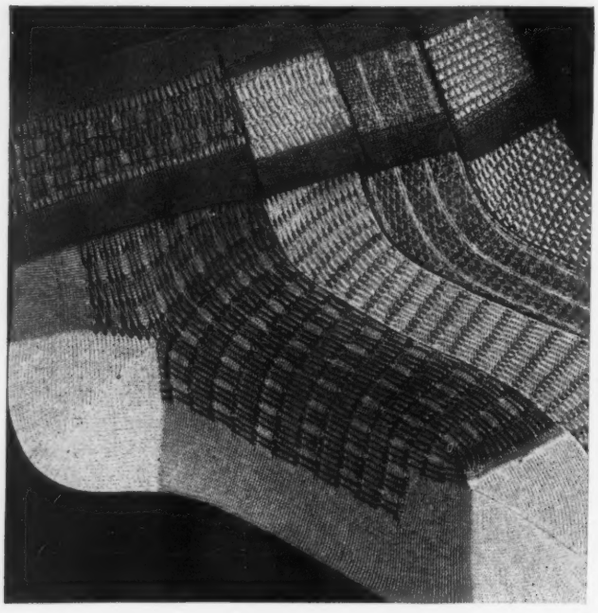
Fashion says "MESHES FOR 1932

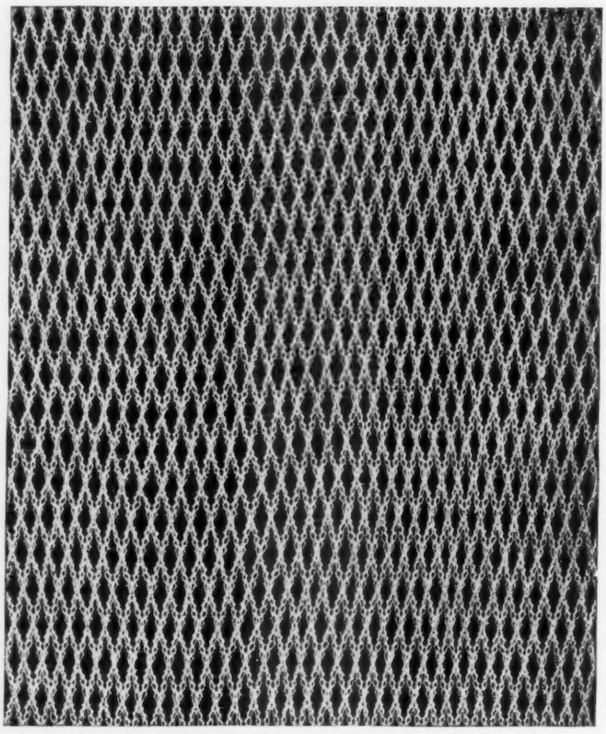
BANNER MESH ATTACHMENT

equips any high cylinder Banner machine for this salable production.

The Banner Mesh Attachment can be applied to any high cylinder Banner Machine from 2" diameter up, and up to and including 70 gauge. Low cylinders can be changed to high at a nominal cost for applying the Banner Mesh Attachment.

BANNER MESH ANKLETS WITH NARROW SOLE and STEP TOE





ACTUAL SIZE PHOTO OF BANNER MESH FOR LADIES' HOSE.

Well styled lines of ladies', children's, men's and boys' sport hose are showing a wide variety of mesh numbers. Samples to show what this Banner attachment can do for your line will be mailed on request.

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Pawtucket, R. I.

General Sales Office and Machine Exhibit,
93 Worth St., New York, N. Y.
Philadelphia, 215 South Broad St.
High Point, Commercial Bank Bldg.
Chattanooga, James Building

NEEDLES, SINKERS, JACKS, LINKS AND PATTERN SUPPLIES IMMEDIATELY AVAILABLE AT ALL BRANCH OFFICES.

be mentioned by name continued strong in their confidence in seamless stockings of silk, rayon and fancy color combination during the rising tide of favor for full-fashioned, and tarried with the ideals of the old school of hosiery producers while many of their former rivals, having taken their losses on the decline of the seamless, were paying for full-fashioned equipment out of earnings of less than two years, in instances. Some of these who had failed to grasp the importance of training with the modern, entered the full-fashioned group in the last year of its greatest prosperity. These are among the first to recognize now the fact that the cycle of events has made a part turn since their advent in the full-fashioned fold and is revolving toward a new age in the mechanics of production. Losses sustained by either of a half dozen or more ordinarily visioning manufacturers in one year of too long deferring the modernization of plants with equipment of entirely different types were greater than would have been the cost of opportunely turning to the coming instead of remaining with the going.

According to commonly accepted statistics, the indicated production of women's hosiery in 1923 was 75 per cent of seamless to 25 per cent of full-fashioned, comparing with 20 per cent of seamless and 80 per cent of full-fashioned in 1930. Seamless machines have not yet run their gamut in the production of women's hosiery and, if the pace at which they are being modernized be maintained, never will. But while much of the product is outstanding for improvement in construction and as filling a place hardly to be attempted by full-fashioned, seamless doubtless never will advance to beyond second place.

Seamless Machines of More Modern Types in Demand for Producing More Fabric Creations.

There continues much demand for modern types of seamless machines formerly running in the hosiery industry. They have been and are being taken for producing modern types of fabric, with which there has been considerable experimentation in the field of knitted garments of one class or another. Some supposedly useless seamless machines for automatic change from rib to plain and crochet stitch were sold last year by manufacturers modernizing their plants. Since then there has been created a demand for a comparatively new fabric of wool and rayon, for example, for which these machines are adaptable. Many have resold, and efforts were made, in instances, to repurchase a considerable number. Necessarily the modern commands a better market than the archaic models of seamless machines, and what is true of seamless applies with even greater force to full-fashioned equipment of today and the days to come, as modernization of machinery goes on.

It seems true in principle that "there's nothing new under the sun", but to establish the truth of the old saw may necessitate a visit to some museum, in the archives of which research uncovers much that supplies the inspiration for modernized creations in textiles, notably in women's hosiery. More profitable plant operation. in the production of these new or revised creations is possible by reason not only of the use of high speed equipment, but equipment with a greater degree of efficiency, and better merchandise.

Modernized equipment is credited with reducing maintenance charges, in this way lowering the cost of the merchandise. This in turn diminishes the spread between cost of operating revamped ancient machines acquired at distress prices, and the cost of producing on the modern. This necessarily would have to be so, as otherwise there would be a greater incentive for stalling off complete obsolescence.

Plant maintenance is so closely linked with plant modernization that it may seem difficult to locate the line of demarcation for the two subjects. It doubtless is true, as being strictly in line with progress, that the full-fashioned hosiery machine, intricate in construction at the best, is less complicated than that of a decade or two ago; is more nearly fool-proof, combines more refinement and represents greater engineering achievement in many respects. The liability to breakdown is minimized, and there is less to fear from the usual wear and tear of the machine itself and more to be reasonably expected of the hosiery which it produces.

It goes without saying that current installation of full-fashioned hosiery knitting equipment will continue to be of the modern in construction and with provision for attachments by which changes to conform to style creations may be made while yet the output of accepted innovations is short of demand. Therein, it is pointed out by manufacturers who are traveling the path of progress, lies the future of their industry.

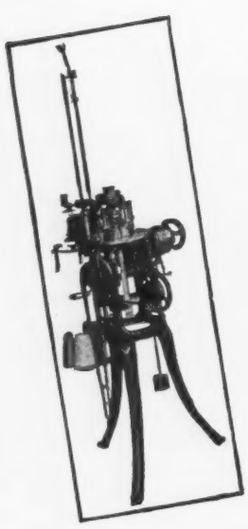
Installation will require a perhaps greater relative outlay and production of the more intricate designs may be slower. Taking this view, the modern equipment of the present may be expected to present a bar to excessive production for some time and work toward a more nearly balanced relation of output and distribution. Economic conditions, it is argued in the trade, call for precisely what is to be accomplished through proper installation and studied plant maintenance.

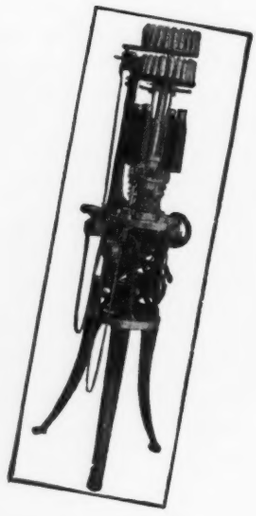
The creation of certain types of mesh hosiery and lace effect is described as a result of a modernized picot bar, in conjunction with lace tackle equipment, all of which is less cumbersome than the mechanism of recent years and which was incapable of comparable output. This earlier mechanism is said in the trade to still possess value in the production of a fabric distinctively outstanding that perhaps has not been attempted on the modern flat knitting machine. The full-fashioned group has left the field of milanese and cut and sewn mesh and lace items to itself, while making epochal strides in the adaptation of mill equipment and product to modern needs for meeting trade conditions for which there is no precedent.

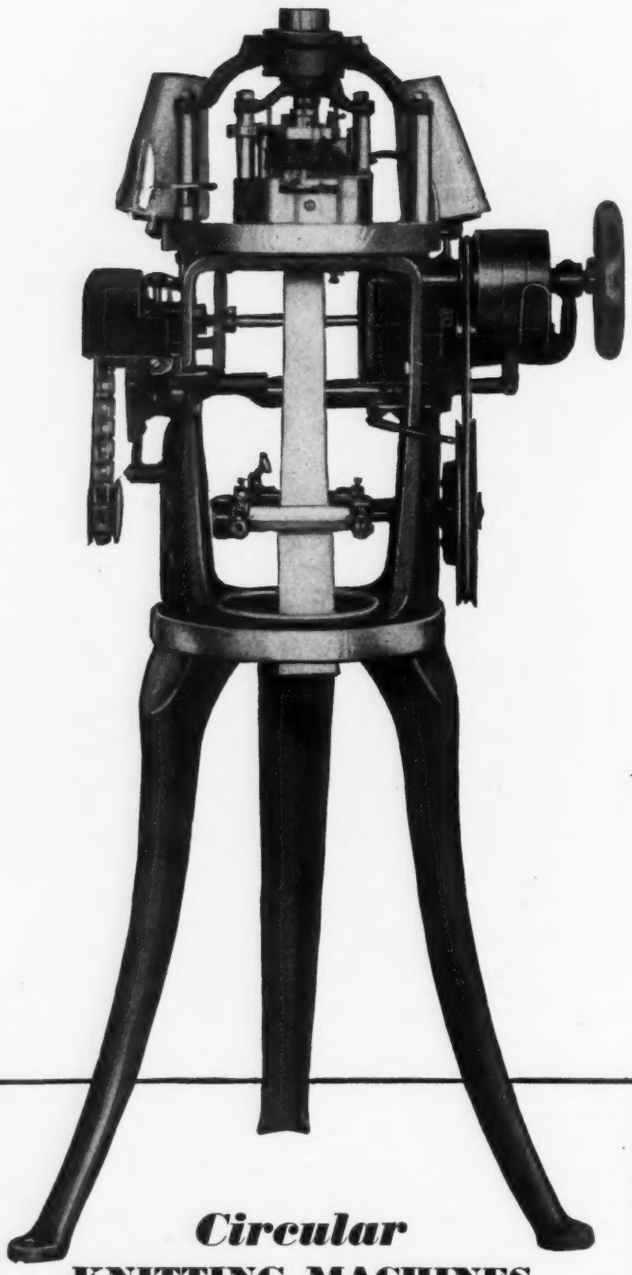
Hosiery plant modernization in this age may be said to be for a specific purpose—the effecting of changes for meeting an economic demand. It is

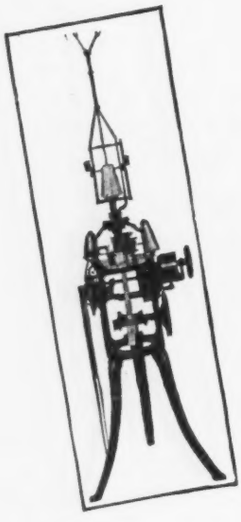
ALL TRUE-RIB

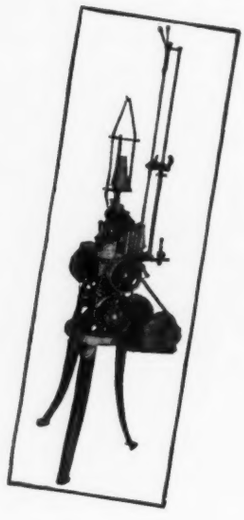
(Patented or patent pending)

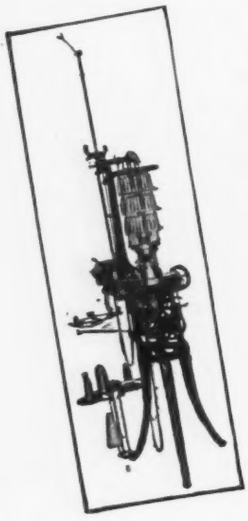


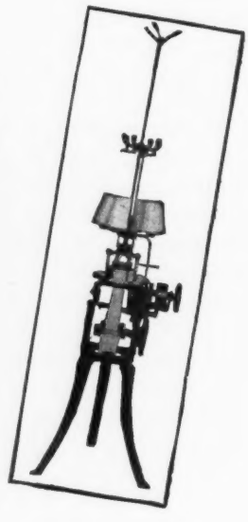












Circular

KNITTING MACHINES
BRAIDING MACHINES
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THE FIDELITY UNIVERSAL RIBBER

authoritatively stated that few, if any, manufacturers are buying new 42-gauge machines, the idea being to eliminate one gauge and work toward standardization of 45-gauge as representing modern construction for plain as well as for fancy hosiery. This idea contemplates adoption of 51-gauge for fine work, although, it is related, there is fairly good business in 54- and one or two manufacturers are committed to conservative installation of 60-gauge, more for the advertising effect of having such number in the line, possibly, than in the expectation of creating demand sufficient to justify volume production.

Losses for Manufacturers Giving Thought to Plant Maintenance Equal Cost of New Equipment.

Losses to manufacturers or, to put it less harshly, perhaps failure to earn reasonable profits, can as often be laid to lack of attention to plant maintenance as to making a virtue of necessity in prolonging the life of antiquated equipment in trying to eke out an existence with the patched-up and worn-out.

A one-time prosperous full-fashioned mill that was among the first to be established in the Philadelphia area was offered at private sale some weeks ago by a representative of creditors. A prospective purchaser looked it over, and having done so, said he never before had visited a plant showing as much evidence of gross mismanagement as this one. Much of the heavy loss to the stockholders can be charged, according to this manufacturer, to lack of attention to plant maintenance. The machinery, of the coarser gauge, had been so neglected that profitably saleable hosiery could no longer be produced with it, while even older machines elsewhere are known to be in successful production. The plant remains unsold.

A New York State manufacturer of rayon underwear was urged by a consultant with whom he conferred, of his own volition, to install new equipment at a cost of around $24,000. As he was getting a profit out of his old machines he was reluctant to draw on the treasury of his company for new installation. The consultant maintained "if you do not bring your plant down to date, you will have lost enough business in two or three years to pay for new machines, and the longer you operate the old ones the less they will fetch when once you decide you must displace them with the modern."

This form of argument won him over. That was two and one-half years ago. He said quite recently he was sorry he had not bought twice the number of new machines as were installed on the advice of the consultant.

The point was made in a trade discussion that there was more antiquated and obsolete machinery in use in the hosiery industry than in either steel, automotive or tire factories as a whole. Carrying the comparison further, it was demonstrated that relatively more factories in each of these groups had prospered in far greater extent than a large per cent of the hosiery mills; that the modern plants were the only ones, with few exceptions, that could be used for illustrating the possibilities for profitable conduct of a hosiery factory.

The point is made also that it is the modern plant that can set the price for a product, and that the antiquated, to compete in quality and volume of production, often must accept prices which show a loss, while the modern rival is earning profits from the production of comparable goods.

Full-fashioned hosiery machinery sold under the hammer in the past two years, in bankruptcy, or receiverships or liquidated by creditors is said in manufacturing circles to have comprised none of the later models, except in one or two instances, when the modern represented a small part of the plant being disposed of, and was sacrificed because of its environment.

In the opinion of building engineers, the full-fashioned hosiery factory of quite recent construction is more nearly adapted to plant expansion than were the structures erected not so many years ago. The modern building of today is planned to represent the equally modern years hence. As stated by William Steele & Sons Company, who are recognized as specialists in full-fashioned hosiery mill construction, and who virtually construct the building around the machinery, there is little likelihood of further increasing the number of sections of a full fashioned frame. Formerly 20 sections were contemplated when planning the ground floor of a mill. In recent years 28 sections have been and still are considered as representing standard capacity, and where the price of land permits, a one-story building of steel construction, with a spacious aisle unobstructed by pillars, is recommended by this engineering company, the aisle separating two rows of machines. As the use of pillars permits a somewhat lower building cost, some manufacturers do not object to them, as tables may be arranged between them in utilizing the aisle space.

High price land in cities is, admittedly, driving manufacturers to communities where mill sites may be chosen for economic plant construction. As modern procedure calls for avoidance of loss of time, the engineers suggest that manufacturers having a plant erected be sure of timely deliveries of the machines, with the idea of having all in place, virtually ready for production, by the time the factory building has been completed. In fact, modern construction contemplates partial occupancy, machines being timed for delivery immediately a section of the floor is ready for their erection. The modern factory building is of a layout that provides for additions, while maintaining a perfectly balanced plant, as arranged in the initial structure.

Since, it is suggested, a manufacturer now considers every other manufacturer a competitor, the matter of an addition to a small factory for a dyehouse is taken into consideration in new construction. While, it is maintained, an owner of a small mill cannot economically operate a dye plant for his exclusive use, there is a possibility that some day he may conduct such an auxiliary profitably by serving other small mills.

Asks About Double Sole and High Splice.

EDITOR COTTON:

I would like to see in your magazine a discussion of the methods used to put double soles and high spliced heels on Scott and Williams Model B-5, 3½-inch 220 needle machines equipped with four-step progressive sinker reverse plaiting attachment. We have trouble making the designs coming in the double sole stand out clearly. We use 150 denier Viscose rayon for face plaiting yarn; 100 denier Dupont Acele for under yarn; and 60s combed peeler for double sole yarn. The yarn finger arrangement, starting on the left side facing the machine, is: No. 1, under plaiting yarn; No. 2, not in use; No. 3, double sole; No. 4, heel and toe; No. 5, not in use; No. 6, face plaiting yarn.

CONTRIBUTOR No. 6018.

Correct Pitch for Narrowing Machine.

EDITOR COTTON:

I think that "CONTRIBUTOR No. 5073" is far more theoretical than practical in his question concerning the correct pitch or adjustment on narrowing frames.

"How can a fixer tell when he has the narrowing frame set in the right pitch? I find that many suggest using a standard textile gauge for the purpose, but up to now I have not been able to locate a standard gauge for this. It seems that every fixer and erector has his own marks, and you will find ever so many gauges with three or four marks. So far as I know, the right specifications are two degrees off of vertical when at rest, and six degrees off of vertical when at the lowest stroke, or at the bottom. But how can one tell or measure this pitch?"

I would not take the position that his question is out of order, but will take the position that it is out of the ordinary. I will also admit that he is correct in his statement that practically every erector of full-fashioned machines has his own marks and gauges for the correct adjustment of the narrowing frame, and that hardly any two of them will agree. But we will assume first that the contributor's question has been prompted by trouble that has developed in the narrowing mechanism of a machine which has been in operation for sometime. This is assumed on the basis that a newly erected machine should not be accepted from the erector until it is functioning perfectly satisfactorily in every respect. This being the case, and narrowing trouble having developed later, does not necessarily carry at all that the frame of the narrowing machine is out of adjustment, but trouble may be due wholly to the fact that the needles and narrowing points have been pliered entirely away from the correct adjustment or the original adjustment of the narrowing machine and the needle bar.

Every full-fashioned machine fixer knows that the functioning of the narrowing machine is to lower the narrowing points to the needle bar or needles in such a way as to close the beard of the needle, descend below the beard and take off certain groups of stitches, move them in towards the center of the head and transfer them to other needles. It naturally stands to reason that this is a very delicate operation and one that has to be performed by parts which are almost perfectly adjusted or much trouble will result. Consequently, the lift and drop of the narrowing machine must be taken into consideration just as closely as the pitch or vertical relationship.

Assuming that a machine has been correctly erected and properly gauged in every respect, we expect satisfactory results from the narrowing frame and mechanism, and every full-fashioned machinery builder supplies the operator of his equipment with all the necessary gauges for the proper setting of all parts which are best set by gauge, and I personally think that when a machine is properly set up by the gauges supplied for the machine that all trouble may be eliminated in the narrowing operation.

Assuming again that such a machine has been operated for some time and is giving trouble in the narrowing operation, it will be necessary first to start in

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WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

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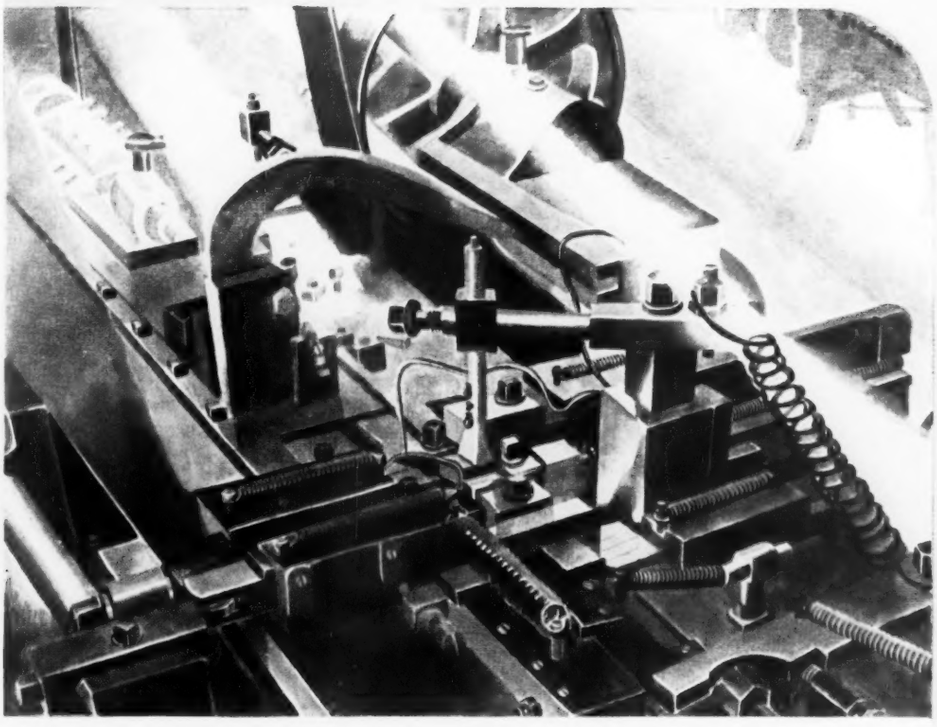
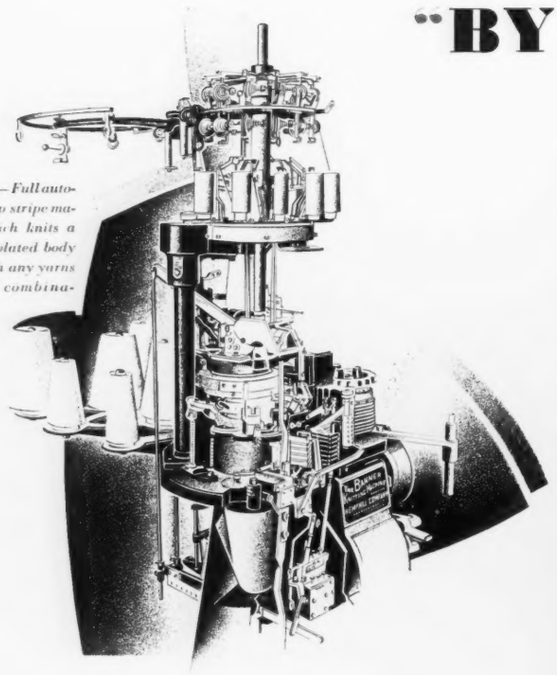


TORRINGTON *SPRING BEARD* NEEDLES

Uniform? Of course they are—right down to the smallest fraction of measurement. Torrington needles are "machine-bred" and their exactness is the result of powerful, smooth-running, tireless *mechanical* activity. Torrington needles reflect the dependability of the machines in which they're made!

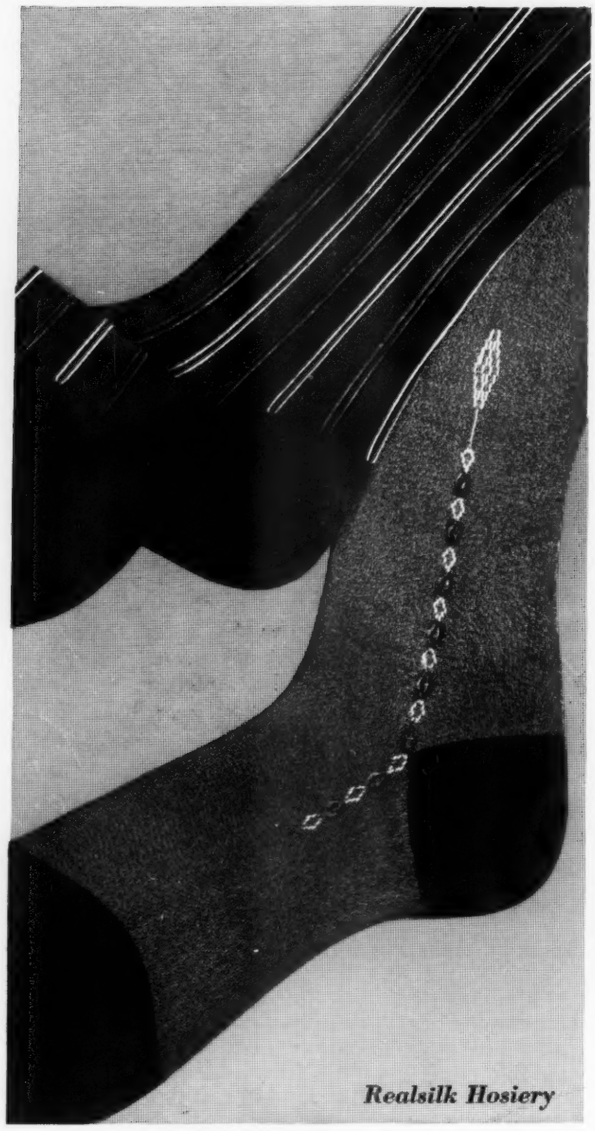
"BY THE COMPANY THEY KEEP"



BANNER—*Full automatic wrap stripe machine, which knits a perfectly plated body fabric with any yarns or plated combinations.*

IT'S quite natural to find Torrington needles in these Banner machines. For they are complex, sensitive machines, built to achieve unusual effects in half hose, and they deserve the tribute of the finest equipment.

This Banner machine, and one of its products — attractive fancy hose by Realsilk — are reasons why Torringtons prefer to be "known by the company they keep."



Realsilk Hosiery

The Torrington Company

ESTABLISHED 1866

Torrington, Conn., U.S.A.

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THE TORRINGTON COMPANY,	1640 FAIRMOUNT AVE.,	PHILADELPHIA
THE TORRINGTON CO., INC.,	140-144 W. 22ND STREET,	NEW YORK, N. Y.
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TORRINGTON *Latch* NEEDLES

and correctly re-gauge the machine for all such adjustments as needle bar, sinker head, and narrowing machine. It is a well understood fact that the presser action of the needle bar as well as the presser action of the narrowing point has a tendency to press the needles forward, which frequently results in the whole bar of needles being pressed considerably out of line and forward. This condition is always worse on the needles on each side of the bar which are affected by the narrowing points, and it seems to be an almost universal tendency on the part of the knitter to keep the needles not affected by the narrowing points in line with those affected by pliering them forward to keep a straight alignment of needles. This finally results in having to plier the narrowing points forward to keep them in proper relationship to the needle that has been pliered forward. All of which is removing the machine from its original setting or pitch. This gradual adjustment or rather unadjustment of needles and narrowing points frequently leads to a change of adjustment on the narrowing machine, when the correct method would be to gauge out the needles and narrowing points and plier them back into the correct setting, which can be done correctly only by using gauges supplied with the machine.

I know of no practical, definite way for the fixer to measure the pitch except through the gauges supplied him by the machinery builder. But every fixer of full-fashioned machines knows that when his narrowing points are not splitting or breaking stitches, or bending needles or striking sinkers, or causing narrowing runs in the narrowings of the stocking that his whole machine is pretty nearly correctly gauged, regardless of how many degrees the narrowing machine may be off of vertical when at rest or at the lowest stroke. And some fixers pride themselves in being able to make all the necessary and satisfactory adjustments without paying much or any attention to gauges of any description. Personally, I am strongly in sympathy with the gauge, and I think that when a full-fashioned machine is correctly gauged out by the gauges supplied for or with the machine, and when needles and narrowing points are in good alignment and in harmony with the gauges, there will be very little to worry about so far as satisfactory results are concerned.

CONTRIBUTOR NO. 5075.

EDITOR COTTON:

In a recent issue "CONTRIBUTOR NO. 5073" asked for discussions as to the proper setting of the narrowing motion on a full-fashioned machine.

I have discussed this question with my head fixer and he says there is no standard fixed gauge for this setting. The amount of pitch would be affected by the position of the narrowing frame with respect to the needles. The frame could be set in an optional position within a certain range on the guide arm assembly, then the pitch would be relative.

Raising or lowering the narrowing frame would also affect the pitch to some extent. The purpose of the gauge is not for standardizing the settings of the narrowing motion on all machines, but rather for perfect alignment of all sections of any one frame to an optional standard for that particular frame. The optional standard for any given machine is determined by the individual requirements of that machine to function properly and the pitch is finally determined by the performance of the machine.

CONTRIBUTOR NO. 5074.

Causes of Varying Speed on a Knitting Machine.

Editor's Note.—As originally submitted, the question of "CONTRIBUTOR NO. 6011", published in the January issue in "KNITTING KINKS", stated that the trouble on his machine was that "the machine runs too fast in the long butt needles and then too slow in the short butt needles". This problem was submitted immediately to three contributors, who answered this question with general suggestions. When their replies were forwarded to "CONTRIBUTOR NO. 6011", he then explained that his original inquiry had not been clear—that what he meant to say was that the dial ran fast and slow, causing trouble in the transfer.

The question was re-submitted with this explanation to the three correspondents who in turn furnished additional information. Rather than consolidate their replies, they are used here separately; the answer first appearing from each correspondent referring to the original question, the one following from the same correspondent being in answer to the corrected inquiry as it appeared in the January issue.

EDITOR COTTON:

Your "CONTRIBUTOR NO. 6011" states that he has 220-needle 3½-inch Model H H machine which is running too fast in the long butt needles and too slow in the short butt needles. He desires suggestions as to the probable cause of this variable speed. The machine is on rayon and Celanese reverse plaited with mercerized tops.

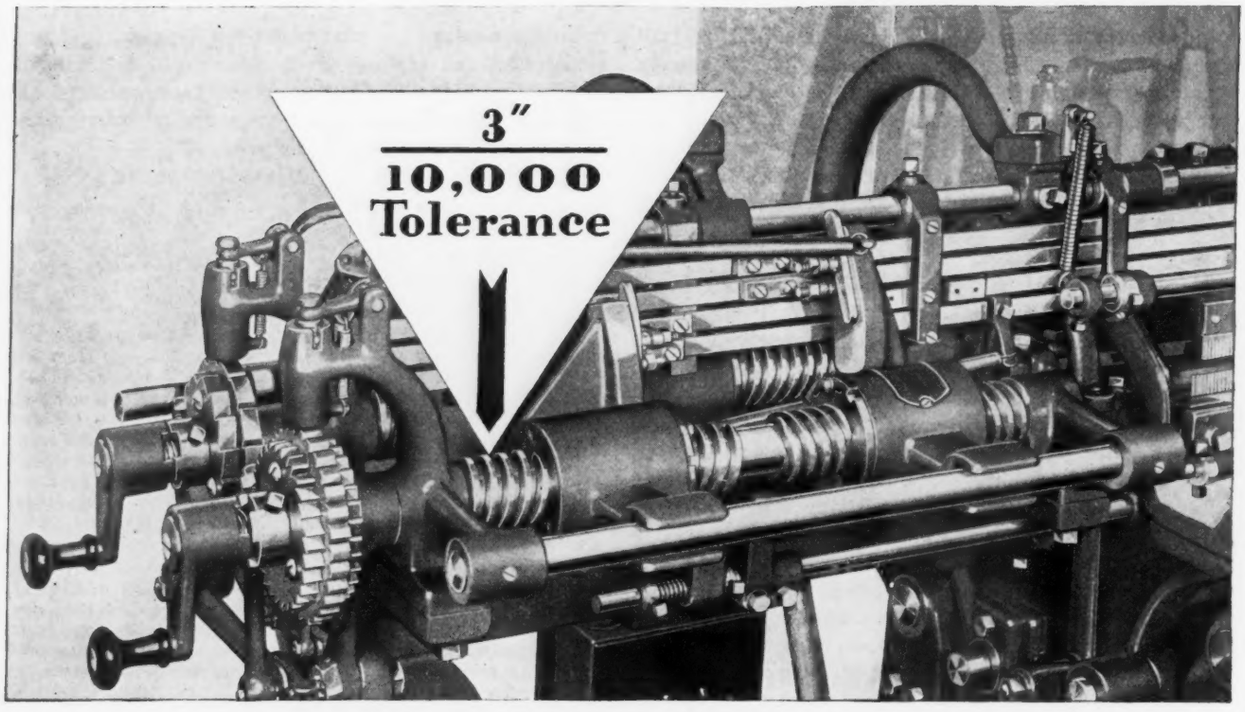
Whether the complaints in question are correctly interpreted or not, the cause of the trouble should be located by adopting a systematic check-up as follows:

(a) See that drive and driven pulleys are running true without binding and that there is no slippage between the shafts and pulleys or pulleys and belts.

(b) Examine all bearings, shafts and gears of machine, eliminating any irregularities such as tight or loose parts, bent shaft or gears not running true or binding.

(c) The trouble might be located quicker by removing the cylinder, sinker head and dial, etc., and being sure everything is all right according to (a) and (b) with these parts removed.

(d) With assurance that everything is all right up to and including the ring gear as well as the dial driving mechanism, it is important to examine the cylinder, sinker head and dial for any possible cause of binding on one side as each revolution is made. The binding is to be looked for in the short butt needle slow speed. The cylinder must be properly centered and securely fastened to the ring gear to run true. Examine cylinder walls and needle slots to be sure the short butt needles work with the same freedom as the long butt needles. Follow this same procedure with the dial and dial needles (hooks and cast-offs) as well as the sinker head and sinkers. Of course the cam up and attachments are to be included in the examination.



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(e) The complaint indicates something binding or working with greater friction on the cylinder, sinker head, or dial between the ring gear and dial shaft drives, causing the slow speed when in the short needles. The above procedure should provide a means of locating the cause and provide a remedy.

CONTRIBUTOR No. 6019.

EDITOR COTTON:

I note the question from "CONTRIBUTOR No. 6011," who said that he has a Scott & Williams H H machine 3½-inch 220-needle which runs too fast in the long butt needles and then too slow in the short butt needles. I will answer him by relating an experience we had last year with a 3½-inch spiral H H machine giving this same trouble.

By turning the short needles into the cam bracket the dial was perfectly in time, but when you pulled the long needles into the same position the dial was fast all the way around. Our first conclusion was that the dial was not center or level, but by testing with a centering tool furnished by the machine manufacturers we found the dial level and center which brought more thought.

It was decided then that the dial spindle must be warped, but it tested perfectly true in a lathe test, so we began to consider the vertical drive and bevel pinion, but found this true, so the cross bar and both gears including the spindle gear were changed in an attempt to locate the trouble, but no results.

So the conclusion was that the dial was bored out of center, but a dial taken from a machine which was right showed the same fault, so after a week of experimenting it was decided that the cylinder was losing and gaining and at the time of this decision the machines were stripped of the dial and our experiment remains unfinished.

It was the unanimous opinion from all of the men watching this experiment that the trouble was either in the main driving gear or the sleeve gear.

Now for my theory. I have seen in machine shops where gears are being made, a gear cutter is started in to cut a gear and before the gear is finished the cutter is broken or badly worn, so a new tool point cuts a different size tooth the remainder of the way around the gear giving it a close mesh half way and a loose mesh the other half.

If the sleeve gear and the driving gear are changed, one or the other will cure the trouble. I would like to know if possible the outcome after the machine is fixed.

CONTRIBUTOR No. 6017.

EDITOR COTTON:

Answering "CONTRIBUTOR No. 6011" who stated in a recent issue that he has a Scott and Williams H H 3½-inch 220-needle machine which runs too fast in the long butt needles and too slow in the short butt needles.

In all of my experience on Scott and Williams machines, I must confess that I have never heard of a machine running in this way. The contributor does not explain what type of trouble this variation of speed is causing him. If he had done so I could go more into detail to help him.

Variation in speed may possibly be caused by one of several things.

1. *Needles.* Be sure the long and short butt needles have the same friction. Too much friction on the short butts and not enough on the long butts would be a possible source of this trouble.

2. *Belt and pulley.* Be sure the belt is not slipping, and that the pulley is not slipping on the shaft.

3. *Gearing.* Check all the gears on the machine to make sure that nothing is preventing them from working freely. It is possible that yarn or needle butts may be lodged in the teeth causing this trouble. The gears binding too closely together at certain intervals of their rotation is a possible cause.

4. *Cams.* A possible cause is cam pressure against the cylinder during its rotation. Cams on the bed plate should not rub the cylinder.

5. *Left side cams.* Make sure the left side cam is not set too close to the left stitch cam which would result in the needle butts rubbing between these cams.

CONTRIBUTOR No. 6015.

Answers to Revised Question.

EDITOR COTTON:

Since being advised that "CONTRIBUTOR No. 6011" meant that the dial on his machines runs fast and slow in the transfer, and not that the machine runs fast and slow, I again refer to the fundamental procedure given in my previous letter (see above) which may be localized to apply to the dial, and dial driving mechanism, including shafts, gears and bearings, etc. The entire dial driving mechanism must be checked for trueness of operation without binding, and if this fails to reveal the source of trouble, proceed to check through the sinker head, cylinder, and cylinder driving mechanism as this still might be where the trouble lies.

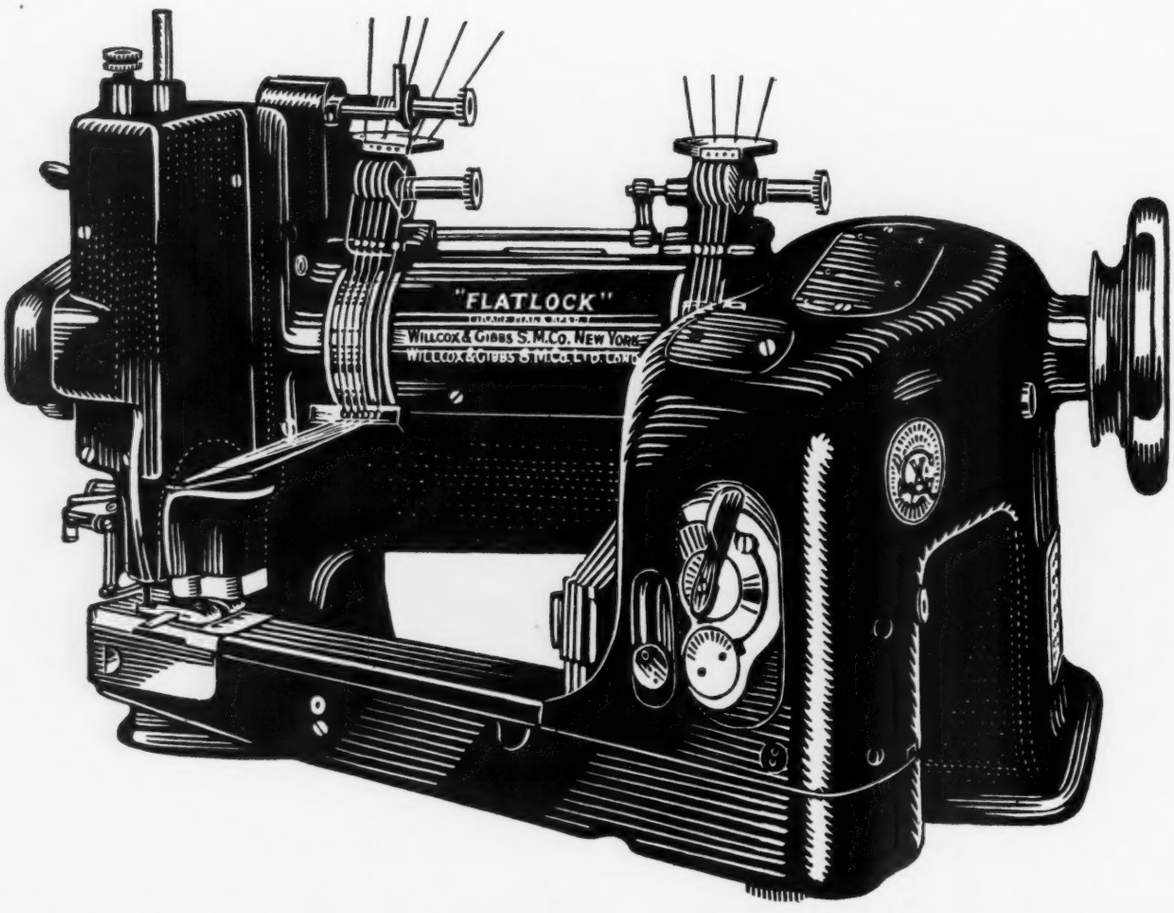
It is well to state that if for any reason one of the gears of the dial driving gear mechanism is off center and runs out of true in any way so that some of the teeth mesh deeper at one place and not so deep elsewhere, this will cause the trouble, and if the trouble is on each revolution of the dial, then the gear giving the trouble is one of the small gears which revolve in unison with the dial.

CONTRIBUTOR No. 6019.

EDITOR COTTON:

I received the correction on the question of "CONTRIBUTOR No. 6011," and after reading it, I do not see fit to change my suggestion (see above) I was led to believe that the dial was gaining on the cylinder and I tried to answer along that line, but the lack of details may have made my answer misleading.

What I meant by saying the dial ran fast and slow was this: The dial and cylinder must be perfectly synchronized and this is done in a round-about way by three sets of bevel and pinion gears. If any



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one of these gears become warped or is caused to wear on one side only the result is a lash of lost motion and if the dial is timed while hanging behind, a forward lash must be expected, or vice versa.

I might further suggest that if this speeding of the dial occurs only at the transfer and is not noticeable in the make-up or rib that the cause is lost motion and when the machine moves into the transfer it slows down to second speed causing the dial to lash ahead or another possible cause is a loose cylinder spline which causes the cylinder to slow down when the slide operates the needles, possibly binding them through the transfer.

CONTRIBUTOR No. 6017.

EDITOR COTTON:

In further reference to the question of "CONTRIBUTOR No. 6011," who has subsequently explained that his original question was not clear, and that, instead of meaning to say that the machine itself was running fast and slow, what he meant to say was that the dials run fast and slow and cause trouble in the transfer.

Even this expression of his trouble is not clear, although I interpret him to mean these transfer dials do not line up with the cylinder needles during the set-up and transfer operations.

I would refer your contributor to the article "Getting a Clean Transfer," by "CONTRIBUTOR No. 4915," on page 891 of the July, 1931, issue of COTTON. I would also refer him to the discussion of "Centering Up a Dial," on page 19 of "Knitting Kinks Hand-Book No. 1" distributed as a premium with COTTON. For convenience, I quote this as follows:

Centering Up a Dial.

"If the jack dial cannot be gotten in line with the cylinder needles, centering up of the jack dial is necessary. The following is the procedure: Take off the dial, dial levers, dial plate, and remove the gear cover from the dial gears; mark the gears so that they can be meshed back again in exactly the same place; then pull out the dial shaft and remove the gear that the shaft goes through. Put the machine on the heel or toe, raising all of the short butt needles level with the long butts. Put in the centering dial for the purpose with the hub pointed down into the cylinder. Take out the two pins holding the cross bar No. 5557. Loosen up the screws holding the cross bar No. 5557. Put the cover down and adjust the shaft hole in the cross bar No. 5557 so that it is in a perfect line with the hole in the centering dial. Then tighten the screws that hold the cross bar No. 5557, being careful not to get it out of line with the centering dial while doing this. Ream out the pin holes, putting in larger pins. Put back together."

I would also suggest that he consider the discussion of "Breakage of Transfer Jacks" appearing on page 28 of this same booklet, which is quoted as follows:

Breakage of Transfer Jacks.

"If the two set screws on the shaft gears do not mesh and the high butt dial jacks are not in front of

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the operator when starting the machine, breakage of jacks and needles will result. The reason for this is that the two set screws when meshed with the high butt dial jacks in front of the operator times the throw of the jacks in relation to the throw of the cylinder needles when making the set-up. If the set screws are off one or more the dial jacks are out of time, resulting in the jacks coming out too soon or not soon enough, which causes broken jacks. The remedy of course, is to set the dial correctly.

"A cylinder needle or dial jack that is out of line will result in broken jacks. They should be kept straight.

"The general cause of broken jacks is due to the dial being out of line in relation to the cylinder needles. As the dial jacks are coming out, instead of going between every other needle, some will hit the cylinder needles due to the fact that they are set too far ahead or not far enough as it happens to be. The dial should be lined up. Instructions for doing this may be found in a previous section headed, 'Centering Up a Dial.'

"If the set-up cams become loose, broken jacks will result. This will result in the dial levers not getting a full throw. The set-up cams on the drum should be checked over, also the cylinder set-up cams, and tightened if found to be loose."

In connection with the foregoing suggestions, the dial running fast and slow is mainly due to play in the gearing which connects the dial to the large bevel gear of the machine. Once this play is taken out, and the dial centered up according to the instructions given above from the "Knitting Kinks Hand-Book", I am at a loss to know what else could be a cause.

Play in the gearing causes the actions of the transfer jacks to be impositive due to the small space in which the transfer bits have to work. As these transfer bits must come out directly in the center of the needles, any play in the gearing will cause them either to overthrow or vice versa.

Running a machine at too high a speed is another possible cause.

CONTRIBUTOR No. 6015.

Some Questions on Manufacturing Half-Hose.

EDITOR COTTON:

Here are some questions with regard to manufacturing half-hose. Information on any or all of them will be helpful to me, and I feel sure that such information will also be of interest to other mill men. I shall appreciate hearing from some of your readers with answers to the complete list or any of the questions.

What is the average percentage of seconds, waste, and needle breakage that two sets of 220-needle, H H spiral machines should show respectively? What percentage of bad work should be tolerated in knitters letting bad work go through to the inspectors in perfect lots? What is the best system for handling bad work of this kind?

Our particular mill has the knitter to replace all imperfect work; that is, make up mends, transfer drop-stitches, misplaits and bad patterns. We consider a fair percentage for knitter replacements around 1½ to 2 per cent at the inspectors in the grey room.

Another question that arises: What are the proper links to be run in the chain for knitting 9½, 10, 10½, I1, 11½ and 12 sizes respectively, on 220-needle rayon and acetate plaited numbers with high splice heel and double sole? You understand that this work is for top price in this range, presumably from $1.65 to $2.00 in regular numbers.

In case a change is anticipated toward manufacturing at a cheaper price, say $1.35, what would be the necessary changes in the set-up of the machines to bring about lower manufacturing costs in rayon and acetate plaited numbers? What counts of rayon and acetate do you use for similar constructions in top price merchandise? Do you find 150 denier over 150 a more practical knitting combination for 220-needle work, or is it better to run finer deniers? If so, what would be your suggestion on the proper counts to run? Also, what counts do you use in the top, toe and heel?

How many links do you run in the ringtoe for each size?

Do you find it practical to knit each size, or do you find that the cost is greater? (Please give your opinion as to higher price range and lower price range.)

Which do you find to be more practical—to have each fixer size his own machines or to have one man size all of the machines? Also, how often do you have your machines sized, and do you have a test run made daily? If so do you find that this is an advantage in the efficient operation of the machines?

In running ingrain work, do you oil your machines as usual, or do you make any changes along these lines? What trouble have you found in cleaning and washing out ingrain work in the dye machine? Does the oil come out readily, or do you have to use some special preparation or solution in the way of soaps or cleaners to clean the hose thoroughly?

What should be the percentage of short lengths or long lengths in finishing? What ways and means do you go about eliminating this trouble at the machines? Do you enforce any penalties on the fixers for such irregularities?

What do you figure a fair percentage of menders made by each looper? Do you allow any on the dock, if so how much; that is, do you allow so many socks or do you allow a dozen to each operator, and what is the rate of the dock?

Do you find it practical to obtain special machine parts that are used regularly on the machine from certain machine shops?

CONTRIBUTOR No. 6012.

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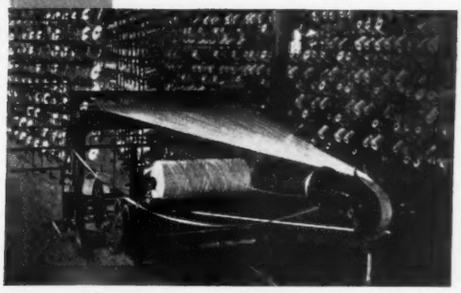


An Incentive for Fixers.

EDITOR COTTON:

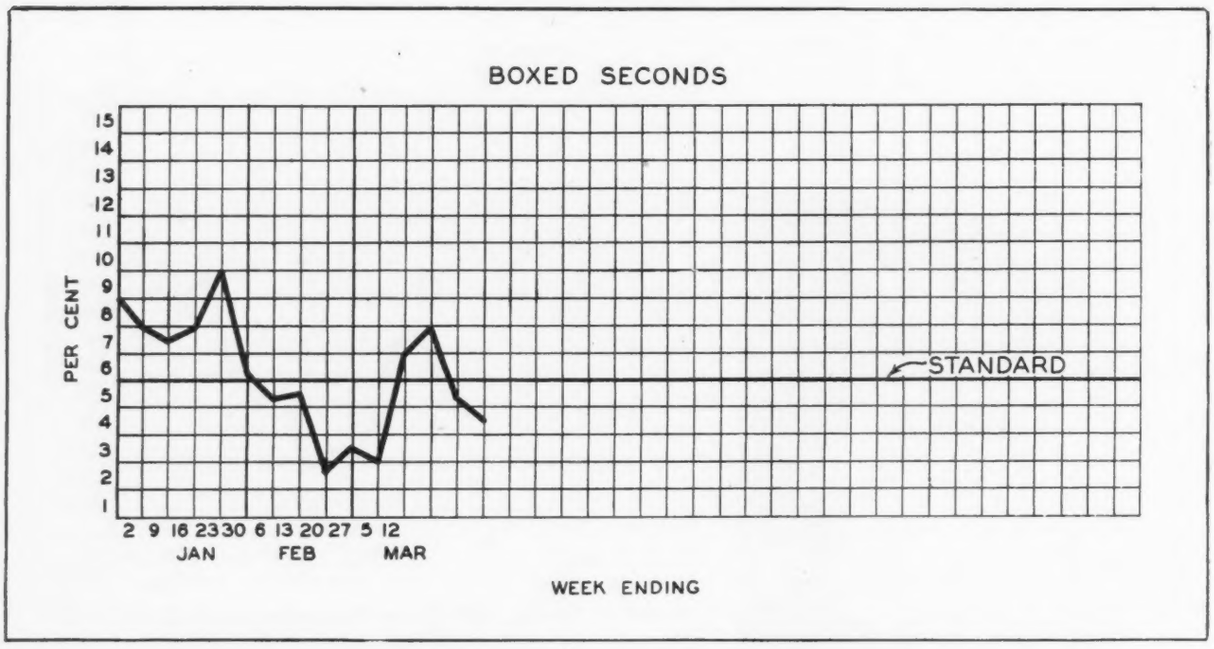
I would like to pass along a few suggestions based on what we have found to be practical and worth while in our mill. A fixer takes more interest in his work if he has an objective and an incentive. In order to do his work intelligently, a fixer should know the percentage of waste, the percentage of boxed seconds, and the number of needles per dozen of production which he is using.

I have found that it helps a fixer a lot to know these things. Now, just how can this information be presented to the best advantage? I would suggest that, first of all, a standard for each of these different items be established, and be computed, not so much from the previous records which may be beyond all rhyme and reason, but from some source that is sound. The needle standard, for instance, may be obtained from the needle manufacturer.

A chart for each of these and any other items which might be desirable to include can then be drawn up to cover any period of time; a year being the handiest. The chart itself (see illustration) should be about 12 inches high and 24 inches long. The paper is ruled up into small squares. Down the left hand side will be the percentages, starting from the bottom and working up. If the standard for waste is 3 per cent, at the 3 per cent line draw a heavy line across the entire length of the paper. Across the top or the bottom the week-ending dates will be marked, every square across representing a week.

Every week the percentages of the different items are computed and a line is drawn from the square representing the previous week's record to the square representing the per cent attained for the current week.

These charts should be placed on a board and hung up, and the attention of the fixers drawn to them periodically. Thus the adjusters can see at a glance just what is taking place from week to week, whether they are making any headway, whether they are below the standards for the different items, etc. By using this method, an adjuster knows exactly where he is standing and has an objective to be attained, not only to keep below the standard, but to seek to stay as low below it as possible. CONTRIBUTOR No. 6028.



How to Obtain Good Plaiting Work.

EDITOR COTTON:

A contributor of yours recently stated that he would like to see some discussion as to the best practice in plaiting. I think there are four main points which have to be considered to obtain good plaiting work on full-fashioned machines.

First, there must always be the proper amount of lead—that is, the silk carrier must always travel 5/8-inch ahead of the plaiting carrier. This may be measured by the back of a sinker. Some knitters use 8 sinkers to a 16 needle lead. This is true for up to 42-gauge, but of course the finer the gauge the closer the needles, and if we were to use 16 needles as a standard we would find that the finer the gauge the less the lead. The lead should be the same at all times.

I have found the speed of the machine to be an important item in obtaining good plaiting work. A machine running at a slow speed will do much better plaiting than one running at a fast speed. I plait at a speed of about 45 courses per minute when plaiting 42-gauge V-soles.

I believe it will be noted that the greater the tension on the plaiting yarn, the better will be the plaiting. I prefer weight tension to friction tension employing the use of wicks, for I have found that where wicks are used they wear differently and are of varying heights.

A good dyer can certainly help out by so setting his dyes that small amounts of bad plaiting that happen to go through will be covered up. A good dyer is

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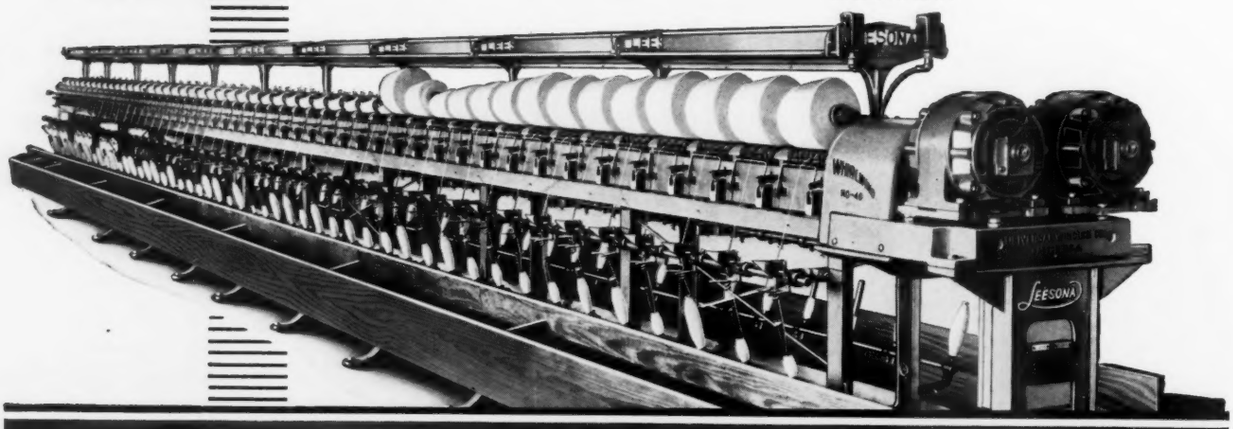

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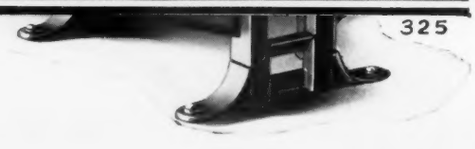


certainly a blessing to most any full-fashioned hosiery manufacturer.

CONTRIBUTOR NO. 5046.

A Ring For Cleaning the Cylinders.

What do you think of this method?

EDITOR COTTON:

Some time ago there appeared an article in COTTON on the cleaning of cylinders. This discussion was devoted primarily to cleaning by compressed air.

In this article I would like to draw a comparison of the two methods of cleaning the cylinders—that is, by compressed air and the old-fashioned way of taking out the sinkers, taking off the sinker head, and then pressing the needles outwards from the cylinder walls.

I don't think there is any doubt about the ability of compressed air to blow out most of the lint and dirt more quickly and easier than the old method. However, the air system is condemned because it has a tendency to force lint back of the needles. This will cause the needles behind which the lint locates to stick out, and this will cause streaked work. While the streaks are more pronounced in silk stockings, they are also noticeable in cotton and lisle.

No doubt some will take issue with my statements and claim that the air pressure is capable of blowing out lint from the cylinder satisfactorily. It is impossible, though, to keep some of it from lodging behind the needles. When we remember the needles fit pretty snugly in the slots of the cylinder, with three shiny cylinder bands pressing the needles in the cylinder, it is easy to realize that some dirt will lodge back of the needles and stay there.

I contend that the old-fashioned way is the only way to clean the cylinder so that streaks will not appear. I agree that to pull out the sinkers, and take off the bed so as to clean out the grooves which the sinkers ride in is some job. I also realize that it takes a lot of time to replace the sinkers one at a time. However, I have hit upon an idea which I am passing on to you with the thought that some of your readers may be benefited by it.

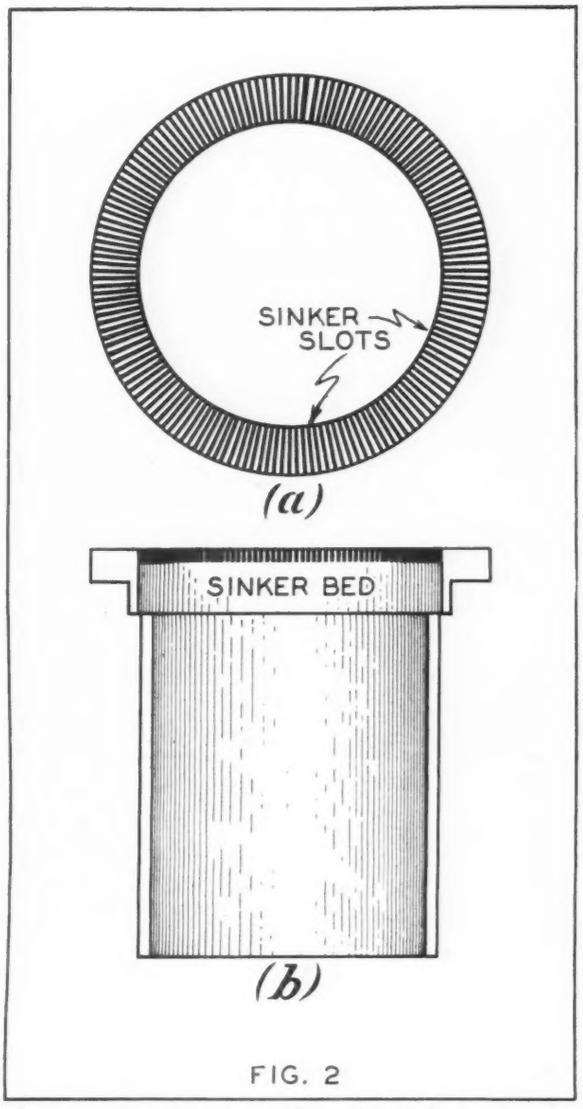


FIG. 2

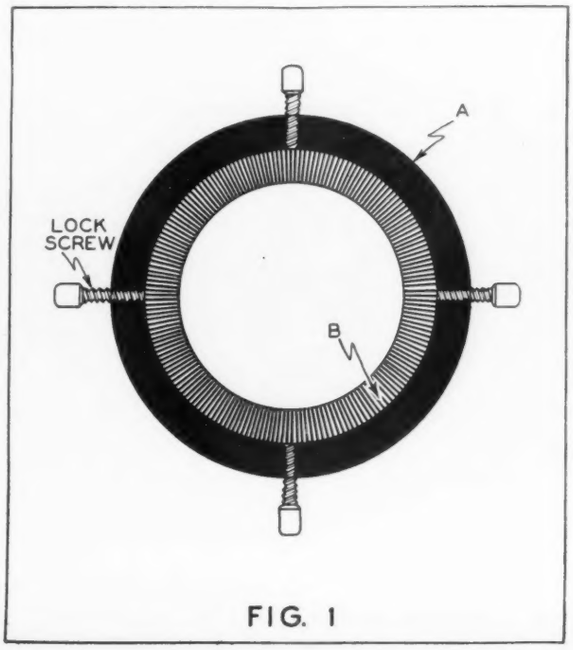
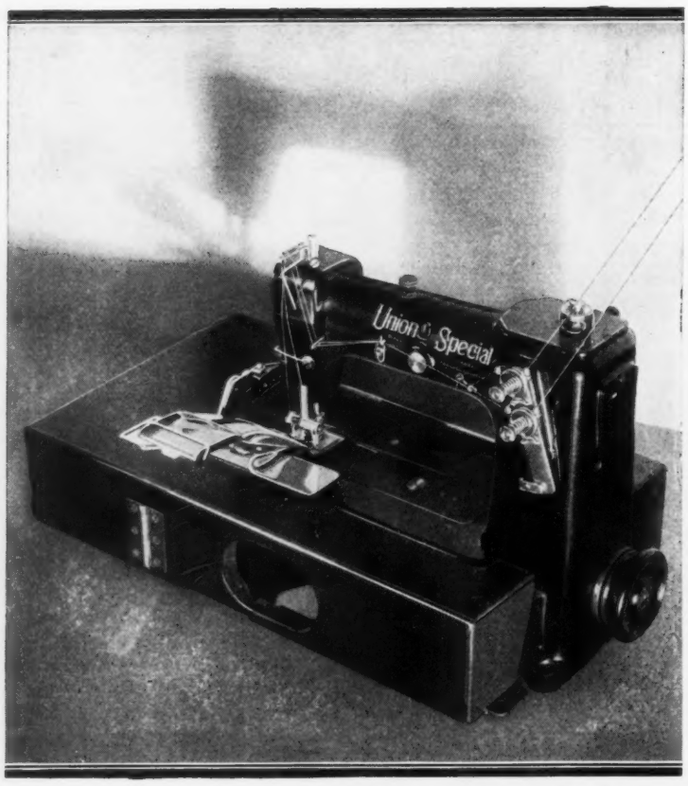


FIG. 1

I have designed an auxiliary sinker head which will slip up from the bottom of the regular sinker head. After it is placed it may be locked against the regular head with lock screws. It is then possible to push the sinkers out of the regular bed into the auxiliary head. The lock screws should then be loosened and the auxiliary head with the sinkers intact dropped. After the cylinder is cleaned by pressing the needles out of the slots and cleaning the sinker wales in the cylinder, the auxiliary head is put back in position and the sinkers replaced in one hundredth the time it takes the old way.

I hope that my sketches, along with the following explanation will be sufficient to explain just how this ring is made:

In Fig. 1 may be seen the regular sinker bed, designated by B, and the auxiliary ring, which is A. The ring A is one-half inch in width and one inch in depth. It is large enough in diameter to slip over the regular Banner or Scott and Williams 3½-inch sink-



Another Union Special for the Shirt Manufacturer

EVERY new type of the new Union Special high speed flat bed seamers has received instant approval and Style 51700 C for center-front work on shirts is no exception.

One machine installed by a large Eastern manufacturer* was followed in less than a month by four more machines for this company's branch plants. The operator of one of these reports that she runs as long as three days at a time without having to thread the looper.

Style 51700 C is especially designed to fold, double-stitch and attach set-on center plaits, with interlining strip, to shirts, blouses and similar garments.

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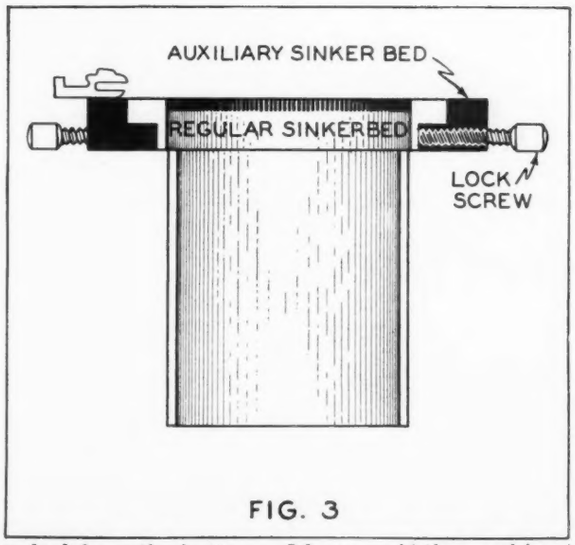

FIG. 3

er bed from the bottom. Of course if the machine to be cleaned is larger or smaller, then the auxiliary ring must be made likewise. The lock-screws to hold the auxiliary ring are shown also in Fig. 1.

Fig. 2a shows a regular sinker head or bed, while Fig. 2b shows a side view of a regular sinker bed and cylinder.

Fig. 3 shows a cross-section drawing of regular sinker bed and cylinder with the auxiliary ring around it. This auxiliary ring allows the sinkers to be pushed out of the regular ring into the auxiliary ring. This is then removed from the cylinder and the cylinder cleaned.

I hope I have made myself clear, but if I have not, I will be glad to answer any question that I can.

CONTRIBUTOR NO. 4920.

Among the Knitting Mills

OPERATIONS have been started by the Loy Hosiery Mills, at Gibsonville, N. C. The company installed 20 split-foot 240-needle Banner machines for knitting men's plain half-hose.

A new hosiery mill has been started in Granite Falls, N. C. W. E. Poovey and H. V. Bolick are partners in the organization.

Pannill Knitting Co., Martinsville, Va., are erecting a four-story addition to increase the capacity of the plant for knitting underwear cloth.

A four-story brick addition is being made at the Bear Brand Hosiery Co., Kankakee, Ill.

Hudson Silk Hosiery Co., Charlotte, N. C., have purchased machinery from Atwood Machine Co., Stonington, Conn., and Universal Winding Co., Boston, Mass., for the throwing plant now under construction.

Sale of the Philadelphia plant of the Signature Hosiery Co., to the Adams-Millis Corp., High Point, N. C., and the McCrary Hosiery Mills, Asheboro, N. C., has been announced. The equipment includes more than 100 full-fashioned machines which, it is understood, will be removed to High Point and Asheboro.

A report from Anniston, Ala., states that the Avalon Building Company will finance the construction of the third unit of the Utica Knitting Co., which is to be erected there, and which will cost $100,000, including machinery, it is understood.

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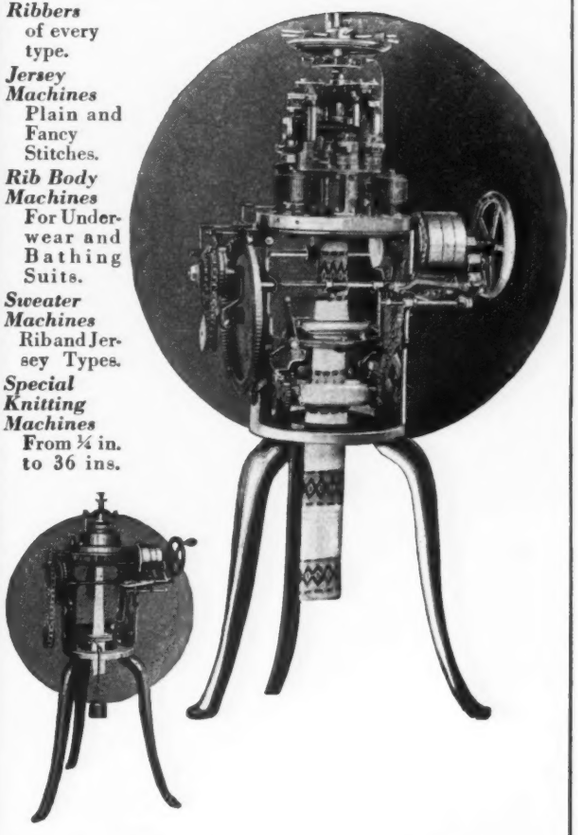

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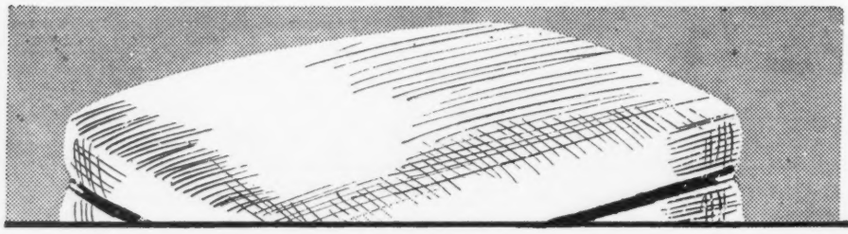

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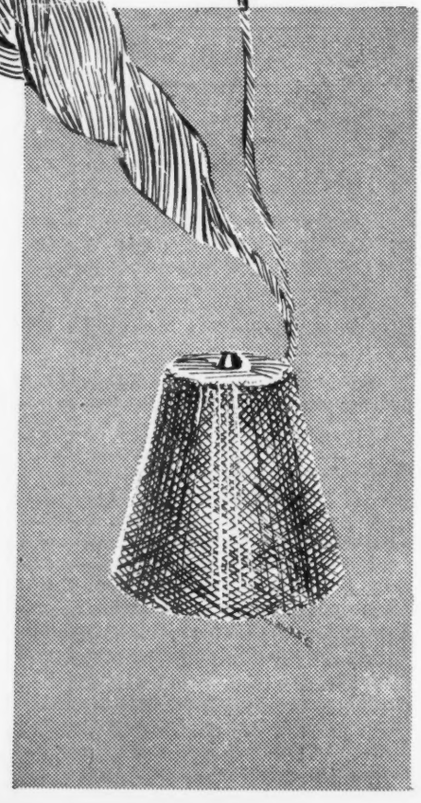

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The KNIT GOODS MARKETS

FORECASTS of lower prices for hosiery in January hardly can be said to have run true, as a general, broad proposition. As raw silk had but a short time before touched the lowest price for all time, buyers seem to have assumed that manufacturers had bought for long-time requirements and might be expected to pass the advantage along to the trade. This did not happen.

Probably the greater part of the full-fashioned hosiery to be sacrificed following the holidays was from mills which had overbought of silk when prices in Japan were ruling higher. It is known to many persons in the trade that there was high price silk aplenty in some of the one-time more important establishments. It was an outstanding factor in the ruin of one concern capitalized at $200,000, which in the closing days of the year passed quietly out of business.

Prudence seems to have been the watchword of the more experienced manufacturers and department store buyers as last year drew to a close, for it since has been revealed that some of the leading big retail establishments sold their holiday stocks of hosiery without reducing prices for the final clean-up, while mills as a class had the lightest inventories of raw silk and finished goods in years. That this was the case in numbers of instances was disclosed when buyers were ordering hosiery in the last week of the fading year for deliveries in the first week of 1932, and manufacturers of certain types of full-fashioned were hard pressed in having the goods finished and on the way to destination on schedule.

While there were uncovered quite a few instances of the character described, the number of mills in need of immediate orders was proved to be greater, as late as the middle of January, than the number operating full time against orders. Manufacturers who were fortunate enough to have gauged retailer needs seem to have made no mistake in accumulating some ready-to-deliver stock.

Branded Lines Led in Price Revisions.

A few manufacturers of standard plain hosiery reported more orders, for more dozens, in the first two weeks of January than in the corresponding period of December. They were an exception, of course, and may have named especially attractive prices for the occasion. Among the busier mills at the outset of the year were several specializing in 45-gauge stockings of modern plain construction, and as many more offering only the coarser gauge goods for odd prices well below a dollar a pair. A manufacturer taking the position that "a great part of the public wants low price silk stockings" has increased his production of 39-gauge hosiery. He is believed to have sold some goods for January-February deliveries at $4.67½ a dozen, to go on the counter for 55 cents a pair. This is one instance of an actual reduction, last year's price being $4.75.

Numbers of leading mills selling their nationally advertised brands directly to the retail trade announced the expected markdowns of around 25 cents to 75 cents a dozen. It seems mills in this division may have led in the lowering of prices, presumably at the behest of their trade, rather than in competition. In any event, their action was followed by slight reductions by some important manufacturers selling wholesalers and large retailers. As represented by buyers of unbranded lines, the quotations of these mills were just a trifle under their late 1931 level, and the changes caused no commotion in the primary markets.

It did appear, as January wore on, that the keener competition might be among the manufacturers of admittedly price hosiery. One manufacturer in this class had been given to understand that, no matter what price he might set, a rival concern would quote 10 cents a dozen lower. So far as could be ascertained, no price war between the two followed this threat. In another case, the manager of a mill manufacturing for the jobbing and retail trades brought out "a new number" of 39-gauge stockings for a new price, "rather than that the machines remain idle," it was explained. So, while there was little or no disturbing price revision, there were announcements of "adjustments" that appealed to an element in the retail trade.

Lace and Mesh Hosiery Gaining in Popularity, Seems a Prevailing Opinion in the Trade.

REPRESENTATIVES of several of the idle mills in Philadelphia were active in soliciting orders last month for hosiery to be made up, and where there were goods in the gray, pushing for color specifications. But it was said by the average large quantity buyer that there had not come to them any evidence of distress hosiery. There were stocks of plain staples whose presence could be ascribed to the swing in demand to lace-mesh stockings. Otherwise the decks were believed to be pretty well cleared for 1932, as indicated in the reports of identical manufacturers to the Department of Commerce for November, 1930-31.

Lace and mesh hosiery and variants thereof may be said to represent the outstanding enigma in the marketing of women's hosiery. Their more enigmatic situation seems due to the great variety of designs and the ease with which a manufacturer here and there seems to have solved the problem of virtually reproducing Jacquard effects by the simplest kind of devices for attaching to their full-fashioned machines. The result as looked for is a wide range of prices, from around one dollar a pair to as high as a designer's flights of imagination may carry him.

The Hancock Knitting Mills, Philadelphia, is credited with having devised an attachment of its own for producing lace hosiery, without the use of the usual tackle. According to one authority, the picot bar is employed for effecting what was believed by most

manufacturers to be impossible except by the use of tackle made for the specific purpose. The management of course declines to state just how its lace stocking is made, further than to say "the only attachments we use are our own."

It is held to be obvious that unless lace stockings can be kept in the higher price brackets, one reason for their introduction may have to be overlooked. It is regarded highly improbable, however, that substitution of mill-made devices for the mechanism brought out last year adaptable to the production of patterns without limit, will much interfere with the plans of those who have entered the lace field equipped for producing the individualistic at the lowest operating cost. The knitting of lace hosiery is a slow process at the best, and, in the opinion of mechanicians, is the slower where the more modern tackle is not employed.

See 25 Per Cent of Women in Fancy Weaves.

The Gimbel Brothers' department store in Philadelphia recently set apart 50 feet of counter for displaying lace and mesh stockings, from the lowest to the highest price. It was predicted then that by the time women stock their wardrobes for spring, 25 per cent of the female population will be wearing either lace or mesh.

Predictions have not been receiving as much attention as when there were possibilities of hosiery shortages, and there are buyers for the trade who have not been ultra-enthusiastic over a long life for the openwork craze, due in part to litigation growing out of alleged infringement of patents, as one issue, and court action over asserted loss of business by reason of a patent owner warning the trade to beware of infringements.

Discussion of these suits in the courts has given lace hosiery and lace tops all the publicity to the distributing trade that might be needed for giving the innovations the widest possible notoriety as something with which to conjure. Thus it happens that laces may not have been accorded the reception they otherwise would have had, leaving their future clouded, to some extent, in uncertainty. Seamless-knit laces are to be taken into consideration from the price standpoint, giving to the subject wide latitude for discussion and speculation.

How long will it be before mills report their production of lace and mesh stockings to the Department of Commerce for monthly compilation of mill statistical information? is a question heard among mill men. Probably the first authentic information along this line will be contained in the report of the survey which was gotten under way last month by Dr. George W. Taylor of the industrial research department of the University of Pennsylvania. The report probably will not deal with lace and mesh hosiery separately, the two forms of construction being treated as one item, in which will be embraced both the full-fashioned and the cut-and-sewn.

It would appear from opinions by hosiery department managers in leading large retail stores that, while virtually all look for wide popularity for lace in original protected designs, there is a disposition to view the mesh, or net construction, as less involved in doubt as to general acceptance. In net hosiery, it is pointed out, the style difference is almost exclusively in the size of the mesh, design playing only a small part, while in lace, it is design entirely. The vogue seldom runs to extremes in any style showing a number of variants, and thus far the medium size mesh has maintained a strong lead over the extremely large and the birdseye type.

Patent Litigation Disturbing for Innovations.

Several manufacturers of nationally known lines who have been taking no interest in lace and mesh hosiery decided only in the last few weeks to include such numbers in their spring lines. But they will buy them, to their own specifications, instead of risking investment in machine attachments. In view of the cost of tackle and an admitted doubt as to the ultimate fate of lace construction, it is believed quite a few concerns will manufacture both lace and mesh for mills selling direct to the retail trade. This, some persons in the trade seem to believe, might prove advantageous to the full-fashioned industry at large, as it would serve to retard undue expansion, while providing hosiery sufficient for meeting market requirements, pending the outcome of litigation over lace tops for full-fashioned hosiery in a court of final resort. Further entry into the field of current novelty construction may be along very carefully studied lines. Acceptance of this proposal means that the suit of J. C. Strahan of the company bearing his name against the Berkshire Knitting Mills and Ajax Hosiery Mills for heavy damages for alleged loss of business through defendants warning the trade against promiscuous sales of stockings liable to be declared an infringement of a patentee's rights, and the suit of the Ajax mills against Strahan for alleged infringement, may have to be gotten out of the way before buyers for the trade will be willing to make commitments in the regular way, the placing of numbers of orders being thus held in suspense.

It is an opinion of some important manufacturers that it is inimical to good business to fight any patent which has not been ruled to be an infringement of the patent of another. For, it is pointed out, should a patent be thrown out, by any process, as not valid, that which it was intended to protect becomes public property, open to as keen competition as any long-time established staple, whereas if its validity be accepted, some production will be diverted to the protected line and thus competition be eased somewhat. In the case of the Ajax patent for lace tops, rights may be obtained, at a cost of about 10 cents per dozen production, with the proviso that prices for certain types of stockings made on a royalty basis are to be maintained at a designated level.

Wool Hose Hard Hit by Mild Weather.

The setback in sales suffered by hosiery of all wool and wool in mixture as reported by stores caught with considerable stocks likely to be carried over to next winter, is indicated in the Department of Commerce compilation of reports of identical mills for November, 1931 and 1930. For example, production of men's all wool in November last year fell to 11,-

398 dozens from 22,795 dozens in the corresponding month of the previous year, and in women's seamless, from 2563 dozens to 1130 dozens, a decline of around 50 per cent for each group. The showing as to rayon and wool in mixture is even more expressive of the drop in output, men's falling to 4071 dozens from 19,063, and women's from 4317 to 1604 dozens. Wool in mixture with rayon lost heavily also in infants' and the boys', misses' and children's group the drop in production of the latter being from 18,642 dozens in November, 1930, to 7658 in November, 1931. Infants' declined to 2240 dozens from 15,287, for wool in mixture with rayon, while in all wool the decline was to 659 dozens from 4395.

Rayon seems to have made a poor showing in the reports of manufacturers for last November so far as relates to women's full-fashioned, production in that month being given as 55,734 dozens, comparing with 143,864 dozens in the like month of 1930. In women's, production of rayon stockings advanced from 123,475 dozens in November, 1930, to 159,545 dozens in November last year. A gain for all rayon was scored also in production of men's half-hose. Manufacturers reported production of only 940 dozens of women's full-fashioned stockings of rayon in combination with cotton in November, 1931, a drop from 15,176 dozens in the corresponding month of the previous year.

"Nearly Firsts," New Classification Term.

It has been suggested that a classification "irregulars and seconds" in the Department of Commerce monthly statistics would present an interesting showing, since so little is heard of these sub-standards, now that first grade is selling for less than seconds a few years ago. The Nolde & Horst Co., Reading, Pa., describes its irregulars as "nearly firsts", a placard bearing this inscription being posted in a Philadelphia department store over a display of Nolde & Horst full-fashioned. It was suggested by a saleswoman that the term is less harsh than the blunt condemnation of stockings as irregulars. As the hosiery displayed under the placard "nearly firsts" was offered in a range of three prices, descending from 99 cents, it might appear that one group was more nearly first quality than the others. The important feature of the term was that it caused shoppers to ask just what was meant, being the first step toward a purchase.

A right good type of silk full-fashioned stocking declared by an expert to be first quality of its grade was bought a few weeks ago for 69 cents. The purchase was made on a Saturday, and on Tuesday the stockings were returned to the store, with holes aplenty in the feet. The woman laid the blame for the holes to low quality of the stockings. The store did the graceful by giving her a pair right fresh from a carton, with the request that she submit the damaged pair to a person competent to account for the damage, and if that person said the holes were due to her own act she would pay for them and if he decided otherwise, she should keep both pairs and regard the account closed. True to her promise to the store, the shopper had a technical member of the faculty of the Philadelphia Textile School pass judgment on the stockings. The professor told her she apparently had danced in shoes a size or two too large for her and caused the damage to the stockings. The woman paid the store for the second pair of stockings and, furthermore, says the store has made of her a permanent customer.

Lincoln Corp. and William Brown Co. Managers Agree as to Light Inventory and Low Overhead.

WHEN Samuel A. Kahman, president and general manager of the Lincoln Hosiery Corporation, Philadelphia, bought the plant of Henry Brown & Sons Co., he made the boast he believed he had a lower overhead cost than any other American full-fashioned hosiery mill. He was referring specifically to the Brentmore plant, bought 18 months before, from the Brentmore Knitting Mills, Inc., which has been operated as a separate unit, as it will be for some time. Both plants are in the same building, on different floors, and have remained intact, every machine in the same position as when the deals were made.

The Henry Brown & Sons Co. mill was acquired from a committee of the creditors of the concern, who had not operated it for several months. The plant complete cost the company around $300,000 to install about 15 years ago. Mr. Kahman bought it for $25,500 and had it in operation by January 4, less than two weeks after its acquisition. It comprises 63 knitting machines of 39-gauge and all auxiliary machinery. The original unit of the Lincoln Hosiery Corporation is in a different building a short distance from the two others.

"To be successful in the hosiery business now," said Mr. Kahman commenting on his purchase, "one must know what the public will buy and have low overhead cost. I believe our stockings are good stockings for the money, selling around 55 cents a pair, and that by spring we shall be operating all of our machines in the three units day and night. Last year we made a deep cut in our overhead, everybody from president to the lowest paid employee accepting a reduction in wages, and we came through ahead, whereas in 1930 we lost money."

The William Brown Co., manufacturers of Granite brand hosiery, at its annual meeting reported receipts from sales of hosiery in 1931 amounting to $1,904,782.32, which was $51,286.94 in excess of the sales in 1930, notwithstanding the lower unit price of hosiery. C. F. Weihman, vice-president of the City National Bank of Philadelphia, was elected president. He succeeds Mrs. M. F. Sullivan, widow of the former president and general manager of the company. She remains a director. Since July 1, when William A. Long, a public accountant, was placed in charge by the stockholders, the assets of the company have increased from a ratio of 1.39 to liabilities, to a ratio of 2.41, according to the annual report by accountants.

In the opinion of Mr. Long, whom the directors elected secretary-treasurer and general manager, a light inventory and working close to orders are es-

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sential to a financial showing in the black, this in addition to the elimination of every item in cost that is not absolutely necessary to economical management. This policy was in force in mills throughout the greater part of 1931, and the result was reflected in a stronger position at the beginning of this year than when manufacturers entered upon 1931. The president of the Nomend Hosiery Mills, selling nationally to retailers under the company's brand, states the business of the company made new records for sales in each 1930 and '31, in spite of talk of industrial depression.

Berkshire's Highest and Lowest Prices.

Taking advantage of the presence of over 200 buyers and other guests attending the Berkshire Knitting Mills clinic several weeks ago, two manufacturers operating mills in Reading had a little clinic, each, of their own, displaying their lines at a hotel and having the latchstring out for Berkshire guests. The trade thought the action of the two manufacturers was not 100 per cent ethical, but ethics are cheaper in times of stress, according to persons commenting on the incident.

Significant statistics presented during the clinic as showing the result of a survey accounted for the larger proportion of hosiery sales being in a price range of 91 cents to one dollar a pair, and that between the spring and fall seasons, sales below this range increased from 13.3 per cent of the whole to 24.8 per cent. Hosiery selling for more than one dollar a pair represented 42.4 per cent of the business of the establishments covered by the survey. Of last fall's business, 79 per cent was in 42- and 45-gauge hosiery, according to the survey.

In naming a price of $11.75 a dozen for its 48-gauge two-thread organzine number with a self-colored stripe, all-silk welt and feet, the Berkshire company is conceded by commenting manufacturers to be making a drive more especially with its finer numbers. The company lists eight numbers at $11.75 each. Its lowest price number is a 42-gauge seven thread with picot, lisle welt and feet. Its highest indicated retail price appears to be $1.50 a pair and the lowest, 79 cents.

Distributors of Underwear See Trend Public Sated with Inferior Rayons —Sales of Men's Heavies Off.

IT CAN be no reflection on the underwear manufacturing and distributing trades that the market situation presents nothing of a particularly inspiring nature. Perhaps the outstanding development of interest is the more pronounced drift to the better types of rayon underthings for women and, from the viewpoint of cotton underwear interests, a disposition among dealers to carry in stock fewer rayon numbers and colors for men. This can, however, be attributed to increasing use of shorts and athletic shirts as a two-piece suit. And the greater popularity for this summer combination as an all-year bit of toggery can be ascribed to the prevalence of summer temperatures in a large area where zero ordinarily was registered in the past.

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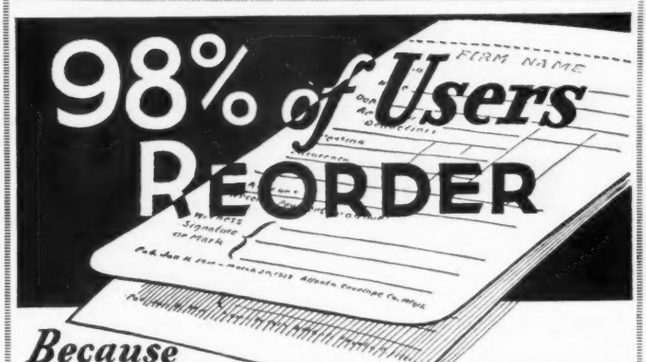

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According to reports of distribution of men's heavy weight cotton union suits and drawers and shirts in most of the territory east of the Mississippi, sales seem to be but about 50 per cent of the volume for a season only a few years ago. In fact, some eastern jobbers distributing in wide territory said a few weeks ago their shipments were not over 50 per cent of reasonable expectations based on the experiences of previous years. Some say they have shipped practically no heavies since December, when many of the retailers were accepting deferred deliveries, feeling it would be unsafe to defer longer. While distribution of shorts and athletic shirts has been on a much broader scale, there has been no dollar volume in the season's underwear business, it is pointed out.

There is and for some weeks has been steady demand for immediate delivery summer underwear for men, and in many instances dealers have been unable to get shipments in time to rebuild assortments for continued call for such garments. In anticipation of a better season for heavies, little preparation had been made for taking care of January demand for light-weights, the expectation being that there would be comparatively little interest until it became expedient to at once assemble spring items. As it happened, spring followed so closely on the heels of fall, the trade passing winter by as a missing cog that for the time might be safely forgotten without interfering with normal operation of the machinery of distribution. Which theory, it has been pointed out, has served to upset the calculations of those concerns which stocked for a fair per cent of sales in previous seasons. A considerable number of failures among retailers is given as one explanation for lighter distribution of heavies, larger stocks in mills and jobbing houses, and changes in specifications.

Interest in Women's Cotton Underwear.

Some little business in women's cotton underwear for the spring season has been placed with a few of the better established manufacturers whose lines are carried year after year in given retail stores. Several mills have noted a slight increase in their spring orders, which is said to be due to widespread dissatisfaction with so much rayon underwear and lingerie of the trashy order. It seemed, from the character of retailer orders, that much of the consuming public had become fed up with price rayons until this class of merchandise was cheapened to the point where it was no longer serviceable. Jobbers in particular noted the demand for and trouble with the flimsy stuff, and note now a definite trend to a better class of vests, bloomers and panties to retail for around 75 cents per garment. But, it is related, average retailers drawing supplies from jobbers carry so few numbers that the business represents no volume, particularly, as some dealers allege, since women are wearing less underwear or patching what they do wear, so long as anchorage for more patches can be found.

Dull luster rayons have a comfortable lead on the lustrous, and there is increasing interest in rayon crepe. Aside from the latter and the general run of rayon underwear, many dealers who formerly sold rayons under a guarantee are no longer doing so, some stating they guarantee none as to wear or satisfactory service. Without a guarantee of some sort, say some distributors, it becomes increasingly difficult to force rayons in competition with silk at current low prices, and low prices for silk has been found a deterrent to sales of fine cotton undies for women.

It is a growing belief in the trade that continued exploitation of trashy, price rayon underwear will narrow its popularity, notwithstanding efforts of manufacturers to broaden the style range. One concern is featuring ribbed mesh garments for women, and with diagonal stripes for the leg sections and vertical or horizontal stripes for the remainder of what is termed a garment. It seems needless to say such innovations are, for the present, confined to women's underthings.

As possibly pointing to a more general acceptance of cottons, women's sports undergarments are of cotton mesh are understood to have met with an encouraging response in some cities. They are said to be of medium count mercerized yarn.

A tight fitting garment that does not extend above the waist and is marketed under the name "Cuddles" and a variety of terms suggestive of snugness, came out last year in fine count worsted yarn, later in wool and rayon in combination and eventually in cotton in mixture, the latter construction for the 50-cent bracket—for the present. Wooly-wins, the original type panties of wool construction, were in the dollar a pair bracket.

Pick-Up in Knitted Outerwear Follows Ending of Bathing Suit Price War.

FOLLOWING a slow session in knitted outerwear due to price competition in bathing suits, principally, manufacturers last month were able to increase production in response to a better flow of orders. Mills seem to have discontinued the price war only when they had run the gamut of revisions to the point of sacrificing both profits and quality, so that it became the general impression in the trade that prices had been stabilized on the new low levels. In this belief, jobbers are less hesitant to place orders, and some right good business was being booked around the middle of January, with prospects of increasing volume as the production season advances. Some of the more important lines sold direct to the retail trade embrace new stitches and new types of fabric, representing features by which it was not necessary to reduce prices to meet the rates being established during the continuance of the price war, which may be said to have terminated after three or four mill managements sat down together shortly before the end of 1931 and talked matters over.

With bathing suits moving in seasonal volume, and sweaters having had a fair start for spring, the knitted outerwear trades appear to be right well engaged. Women's slip-ons of fine French spun worsted are among the really promising items, and lace effect is being applied to several numbers of a leading Eastern manufacturer.

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ABERFOYLE MANUFACTURING COMPANY

REPRESENTATIVES IN ALL THE PRINCIPAL COUNTRIES OF THE WORLD

The YARN MARKET

Philadelphia, Pa., January 16th, 1932.

THE local cotton yarn trade has maintained an uphill but fairly successful fight in striving to maintain prices approximating a parity with cotton. The trade was prepared for several weeks of apathy on the part of consuming interests, as it had become apparent little was to be expected in cotton goods activity until after the usual post-holiday clean-up of goods which had been provided in greater quantity than was necessary for meeting requirements in a somewhat trying market. But dealers did not anticipate a bear raid on yarns by buyers for manufacturers simply because needs were slower than usual in development. Even with cotton ruling steady, manufacturers seemed to regard declines in yarn inevitable as a result of suspended demand.

Necessarily, there was little interest in coarse counts of knitting yarns in the Philadelphia area, as manufacturers of heavy weight underwear were receiving no repeat orders, although having taken far less than a normal amount of initial business, and it was no easy matter to hold 10s single on cones at 13 cents and other counts in the coarser group on that basis. A few sales of small lots were reported consummated on the basis of 14 cents for 10s of high grade yarn. On the other hand, there were trustworthy reports of at least one transaction in which the price was 12 cents, this for a low order of yarn, composed in part of card waste, in the opinion of some.

A more unsatisfactory aspect of the situation along in January, while yarn dealers were waiting for the business that was expected to develop right after the middle of the month, was the weakess of 2-ply warps, with 10s reported sold for 13 cents and 20s at 15 cents, and buyers offering 18 cents for 30s, while the ruling quotation was 19. A Georgia spinner was circulating in the Philadelphia yarn trade, his mission being, apparently, to correct a mistaken notion that buyers, by waiting, could force prices still lower. According to his cost sheet, which he laid on the table for anyone interested in trying to dispute his figures, a cash loss of over $200 a week on a production of 35,000 pounds of carded a week, could not be escaped, computing cost on the basis of raw cotton at 6.10, and selling about that time for around seven cents for July.

A hopeful situation along in January was presented in a slight accumulation of orders mostly for yarn out of stock in Philadelphia, this phase of the then condition applying more particularly to knitting numbers. There remained echoes of a lull in tapestries, carpets and plushes, but it appeared that buyers for mills were at last being forced to strengthen their yarn reserves.

Some little consideration was given to contracting, and it is understood several contracts for 100,000 pounds each and less were written. It was regarded significant, however, as viewed by buyers, that notwithstanding protracted comparative steadiness in cotton, yarns did not follow the fluctuations in the markets for the raw fiber. Yet it was held, generally, as inevitable that any spurt in demand for yarns would enable sellers to command slightly more than the month's highest prices.

The trade talks in terms of carded yarns, since combed peeler, single and ply, seems lamentably neglected and, along with mercerized, is said by authorities to be selling for less than cost of production.

Philadelphia prices published on January 15 follow:

Single Skeins.

4s to 8s	12	10s	12½
12s	13	14s	13½
16s	14	20s	15
24s	17	26s	18
30s	19		

Single Warps.

10s	13	12s	13½
14s	14	16s	14½
20s	15	26s	18
30s	19		

Two-Ply Skeins.

8s	12½	10s	13
12s	13½	14s	14
8s tinged tubes	12½		
24s	17	26s	18
30s	19	40s	26

Two-Ply Warps.

10s	13½	12s	14
14s	14½	16s	15
20s	15½	24s	17
26s	18	30s	19
40s	26		

Frame Spun Carded Yarn on Cones.

8s	12½	10s	13
12s	13½	14s	14
16s	14½	18s	14½
20s	15	22s	16
24s	17	26s	18
30s	19	40s	26
30s dbl. carded	21		
30s tying in	18		

Carpet Yarns.

8s and 9s white warp twist	13
8s tinged tubes	13½
8s part waste	11

Two-Ply Combed Peeler Skeins and Warps.

8s to 16s	22	20s	24
24s	26	30s	29
40s	32	50s	35
60s	39	70s	49
80s	59		

Combed Peeler Yarns on Cones.

18s	21	24s	23
30s	26	36s	28
38s	29	40s	30
50s	35	60s	39
70s	49	80s	59

Mule Spun Carded Yarn on Cones.

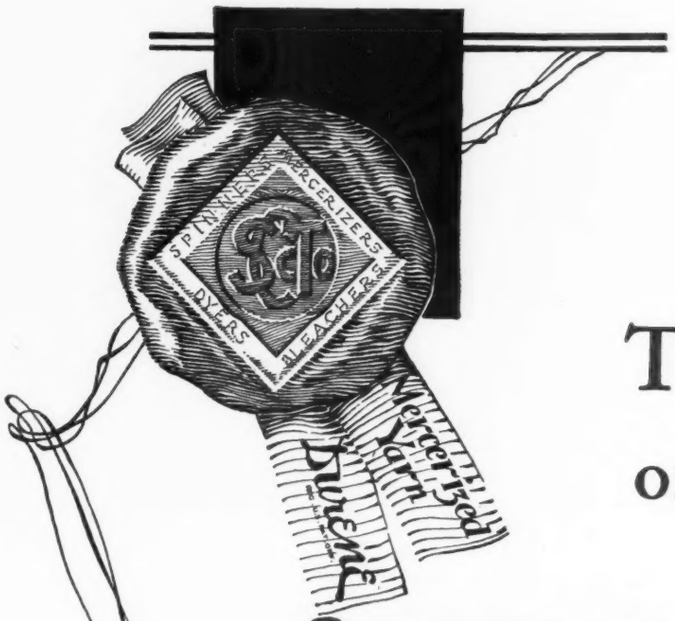
10s	19	12s	19½
14s	20	16s	20½
18s	21	20s	21½
24s	24	28s	25
30s	26	40s	34

Mule Spun Combed Peeler Yarn on Cones.

10s	24	12s	25
14s	26	16s	27
18s	28	20s	30
22s	31	26s	32
28s	33	30s	34
36s	37	38s	39
40s	40		

Tinged Insulating Yarns.

8s	12	8s–2	12
12s–1	12½	12s–2	12½
10s–1	13	10s–2	13
		20s–2	15



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Lactic Acid
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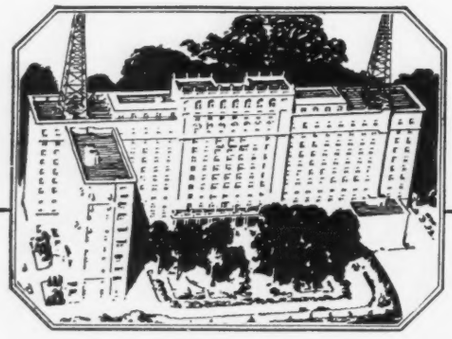

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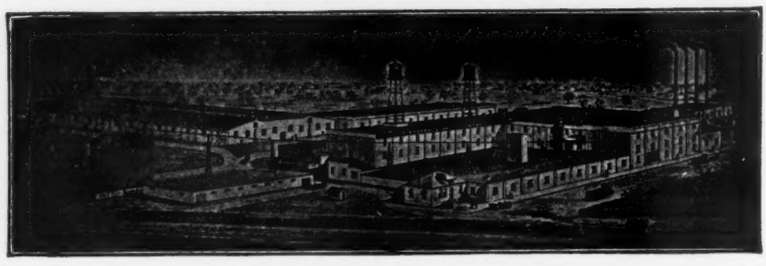

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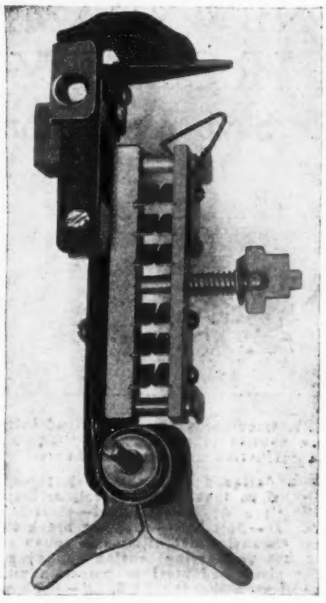

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On request our representative will call and give you complete information.

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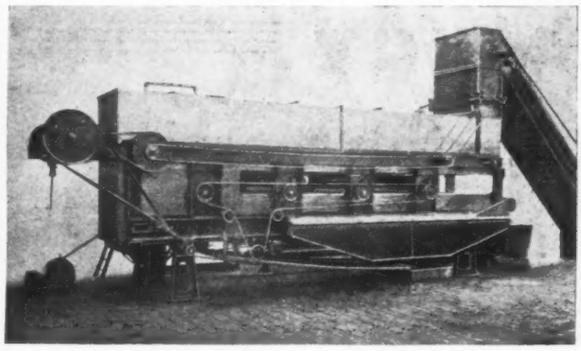
Yarn Cleaner



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—and it saves bobbins, too.

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THE CENTRIF-AIR ADJUSTABLE COTTON CLEANING SYSTEM

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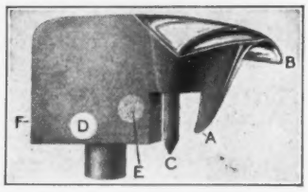

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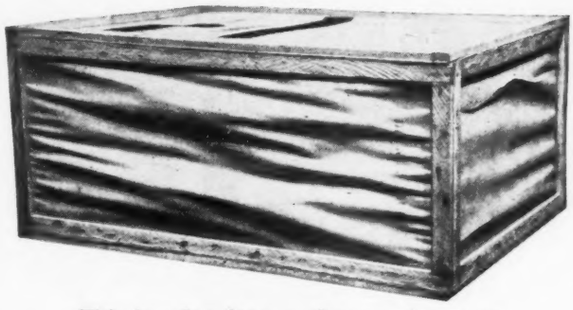

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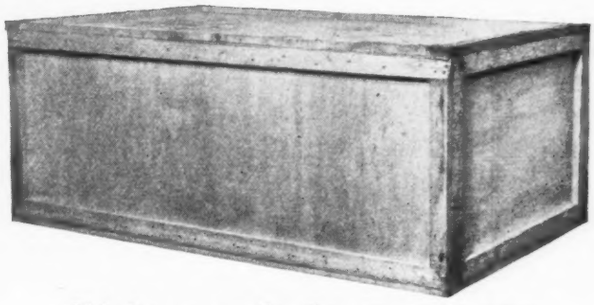

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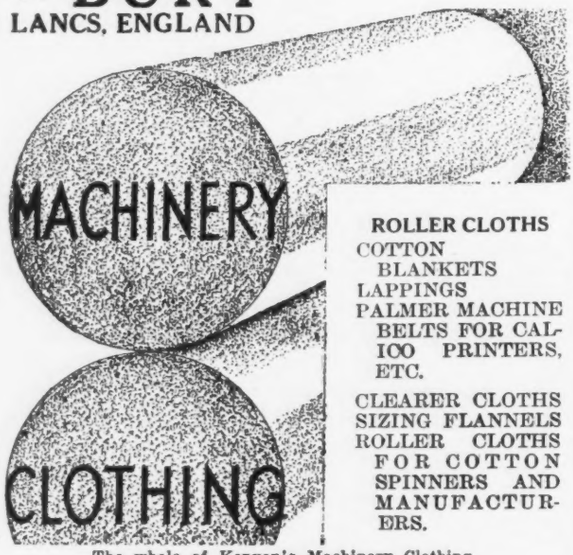

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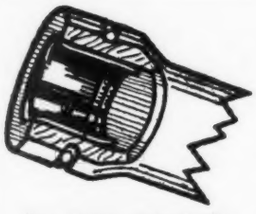

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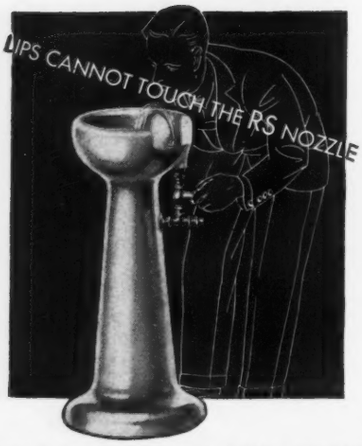

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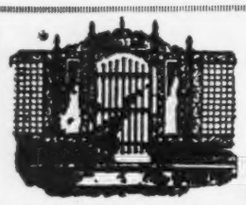

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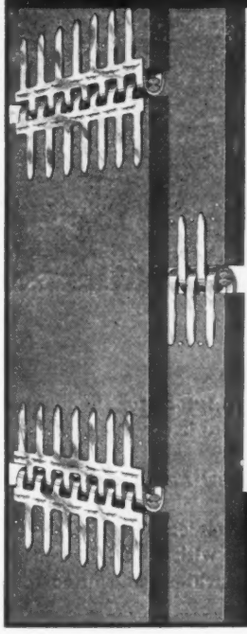

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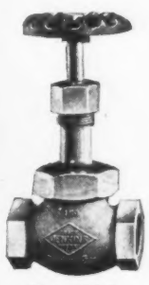

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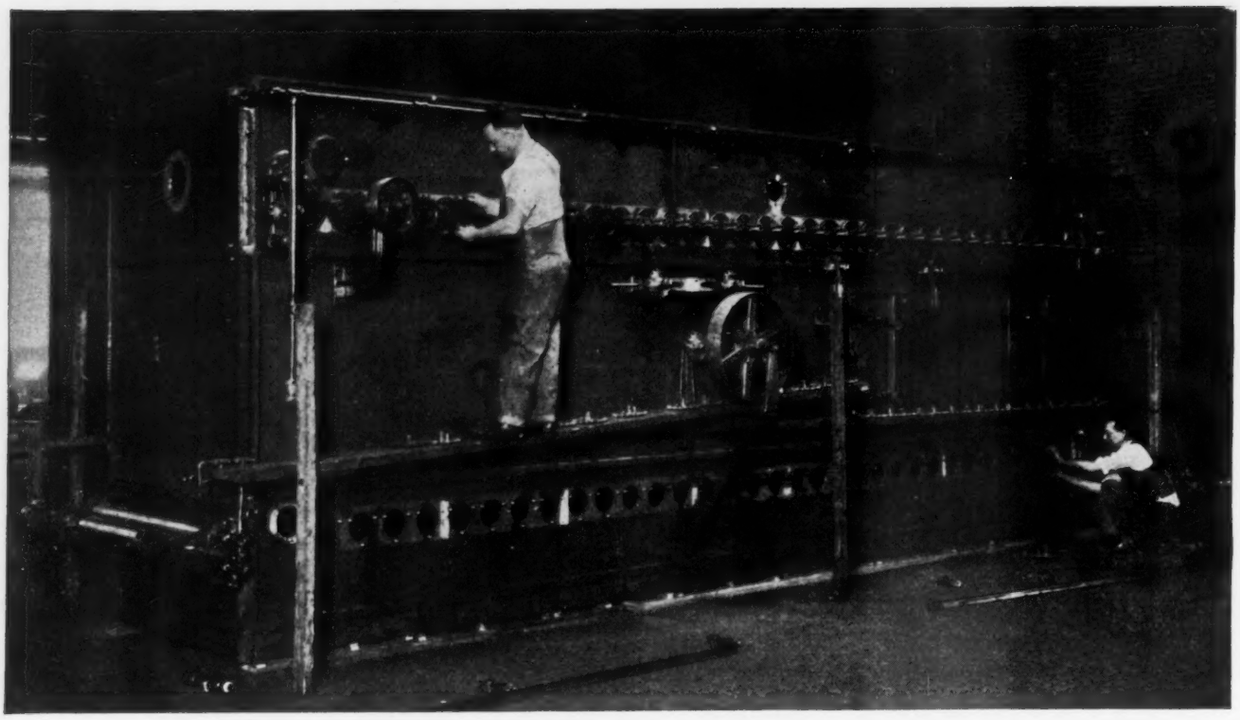

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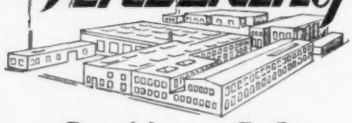

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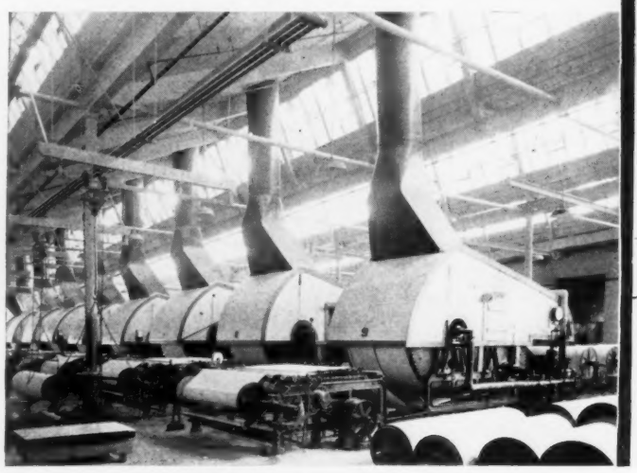

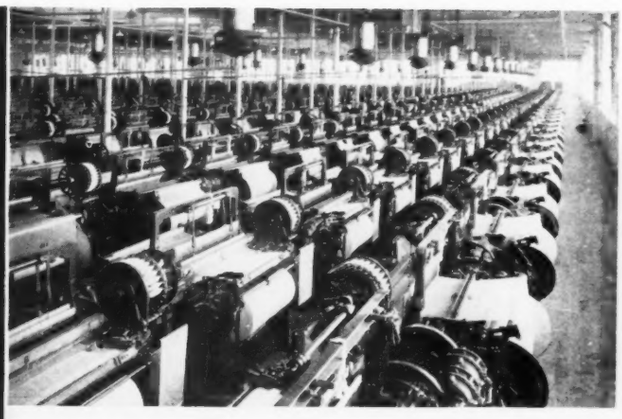

MUCH LESS LOOM STOPPAGE HERE!

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WARPS perform good or bad in the weave room—according to the way they have been treated in the sizing process. Badly sized warps are bound to eat up profits by breaking and causing excessive loom stoppage, as well as shedding. What can you do about it?

Give more attention to the starch you use. ***Know*** that it is good before you send your warps to the slashers. No matter whether your fabric is a standard weave or something special, know that the results in the weave room will be satisfactory.

You can do this by using Staley's Starches and consulting with Staley's technical engineers. This eliminates much lost time and expense for you.

Staley's Eclipse Mill Starches mean smoothness, greater strength, less loom stoppage and shedding. Staley's Starches, whether Pearl, Powdered or Eclipse Thin Boiling are constantly uniform, pure and dependable.

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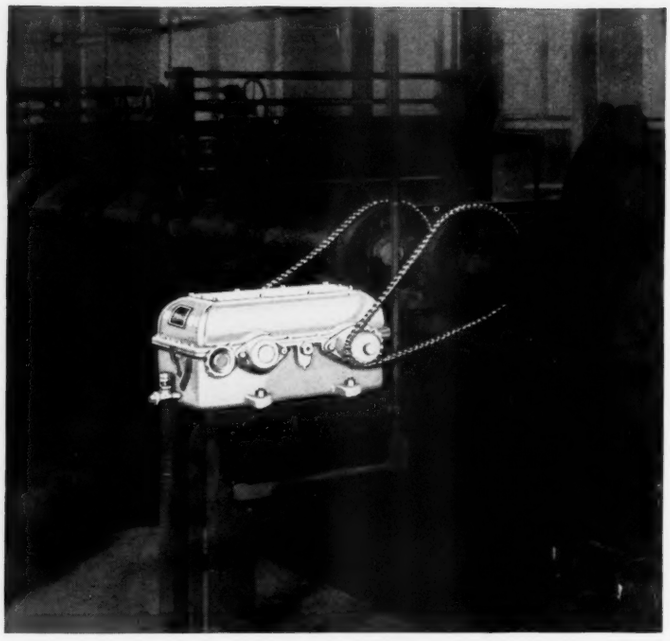
Remember that Staley's laboratories are always at your service.

Positive Variable Speed Transmission



AIDS QUALITY AND PROFITS

LINK-BELT P|V GEAR

Positive, Infinitely Variable speed control of production machinery is becoming more and more of a factor in the modern manufacturing plant. Equipment builders and users alike recognize positive variable speed control as a basic requirement for increasing the utility and capacity of a machine, preventing wasteful and inaccurate speeds, and resulting in full flexibility of production, as well as a superior product.

The Link-Belt P.I.V. Gear is unique in that the power is transmitted from input to output by a positive toothed chain of novel design. It provides a variable yet positive drive, with a micrometer precision in its adjustment of speeds on the variable shaft. The transmission is compact, totally enclosed, running in oil, and readily lends itself for application under a wide range of conditions.

The diverse applications in successful service for more than a year, resulting in many repeat installations, have demonstrated superior operating advantages, combined with durability.

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